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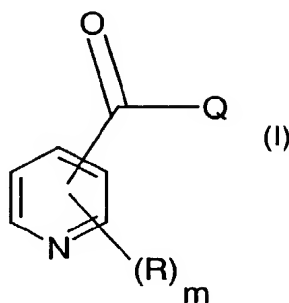
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(54) Title: HERBICIDAL COMPOSITION

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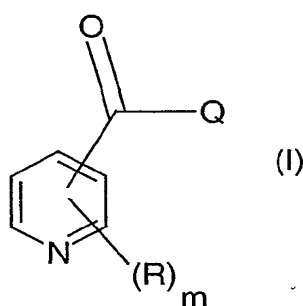


(57) Abstract: A herbicidal composition that, in addition to comprising customary inert formulation adjuvants, comprises: a) a compound of formula (I), wherein the substituents are as defined in claim 1; and b) a synergistically effective amount of one or more compounds of formulae (2.1 to 2.51). The compositions according to the invention may also comprise a safener.

Herbicidal composition

The present invention relates to a novel herbicidal composition comprising a herbicidal active ingredient combination that is suitable for the selective control of weeds in crops of useful plants, for example in maize crops. The invention relates also to a method of controlling weeds in crops of useful plants, and to the use of the novel composition for that purpose.

The compounds of formula I

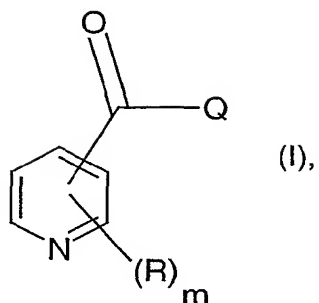


wherein the definitions of the substituents are given hereinbelow have herbicidal activity.

Surprisingly, it has now been shown that a combination of variable amounts of active ingredients, that is, of an active ingredient of formula I with one or more of the active ingredients of formulae 2.1 to 2.51 listed below, which are known and some of which are also commercially available, exhibits a synergistic action that is capable of controlling, both pre-emergence and post-emergence, the majority of weeds occurring especially in crops of useful plants.

There is therefore proposed in accordance with the present invention a novel synergistic composition for selective weed control that, in addition to customary inert formulation adjuvants, comprises as active ingredient a mixture of

a) a herbicidally effective amount of a compound of formula I



wherein each R is independently hydrogen, C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₁-C₆alkoxycarbonyl, C₁-C₆alkylcarbonyl, C₁-C₆alkylamino, di(C₁-C₆alkyl)amino, C₁-C₆alkylaminosulfonyl, di(C₁-C₆alkyl)aminosulfonyl, -N(R₁)-S-R₂, -N(R₃)-SO-R₄, -N(R₅)-SO₂-R₆, nitro, cyano, halogen, hydroxy, amino, benzylthio, benzylsulfinyl, benzylsulfonyl, phenyl, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl; wherein the phenyl group may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₄₅, NR₄₆R₄₇, halogen, cyano, nitro, phenyl or by benzylthio, wherein the latter phenyl and benzylthio groups may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro; or each R is independently a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur; wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring via a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio,

C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen; or

each R is independently C₁-C₄alkoxy-C₁-C₄alkyl or C₁-C₄alkoxy-C₁-C₄alkoxy-C₁-C₄alkyl; m is 1, 2, 3 or 4;

R₁, R₃ and R₅ are each independently of the others hydrogen or C₁-C₆alkyl;

R₂ is NR₁₀R₁₁, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₄ is NR₁₂R₁₃, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

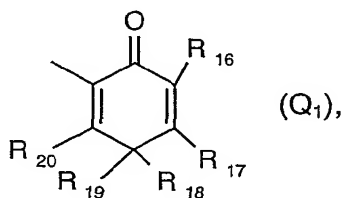
R₆ is NR₁₄R₁₅, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₇ and R₄₅ are each independently of the other C₁-C₃alkoxy, C₂-C₄alkoxycarbonyl, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₈, R₁₀, R₁₂, R₁₄ and R₄₆ are each independently of the others hydrogen or C₁-C₆alkyl;

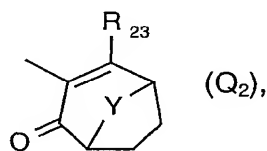
R₉, R₁₁, R₁₃, R₁₅ and R₄₇ are each independently of the others C₁-C₆alkyl or C₁-C₆alkoxy;

Q is the group Q₁



wherein R_{16} , R_{17} , R_{18} and R_{19} are each independently of the others hydrogen, hydroxy, C_1 - C_4 alkyl, C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl-NHS(O)₂, C_1 - C_4 haloalkyl, -NH- C_1 - C_4 alkyl, -N(C_1 - C_4 alkyl)₂, C_1 - C_6 alkoxy, cyano, nitro, halogen, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl-S(O)₂O, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl-S(O)₂O, C_1 - C_4 alkyl-S(O)₂NH, C_1 - C_4 alkyl-S(O)₂N(C_1 - C_4 alkyl), halogen, nitro, COOH or by cyano; or two adjacent substituents out of R_{16} , R_{17} , R_{18} and R_{19} form a C_2 - C_6 alkylene bridge;

R_{20} is hydroxy, O^-M^+ , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $R_{21}R_{22}N-C(O)O$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12} haloalkenylsulfonyl, C_2 - C_{12} alkynylthio, C_2 - C_{12} alkynylsulfinyl, C_2 - C_{12} alkynylsulfonyl, C_1 - C_4 alkyl-S(O)₂O, phenyl-S(O)₂O, (C_1 - C_4 alkoxy)₂P(O)O, C_1 - C_4 alkyl(C_1 - C_4 alkoxy)P(O)O, H(C_1 - C_4 alkoxy)P(O)O, C_1 - C_{12} -alkyl-S(CO)O, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl-S(O)₂O, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl-S(O)₂O, C_1 - C_4 alkyl-S(O)₂NH, C_1 - C_4 alkyl-S(O)₂N(C_1 - C_4 alkyl), halogen, nitro or by cyano; and R_{21} and R_{22} are each independently of the other hydrogen or C_1 - C_4 alkyl; or is the group Q_2



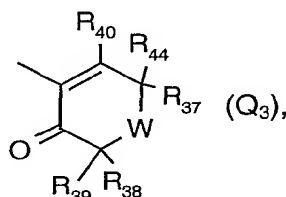
wherein R_{23} is hydroxy, O^-M^+ , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $R_{24}R_{25}N-C(O)O$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12}

haloalkenylsulfonyl, C₂-C₁₂alkynylthio, C₂-C₁₂alkynylsulfinyl, C₂-C₁₂alkynylsulfonyl, C₁-C₄alkyl-S(O)₂O, phenyl-S(O)₂O, (C₁-C₄alkoxy)₂P(O)O, C₁-C₄alkyl(C₁-C₄alkoxy)P(O)O, H(C₁-C₄alkoxy)P(O)O, C₁-C₁₂-alkyl-S(CO)O, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₄alkyl-S(O)₂N(C₁-C₄alkyl), halogen, nitro or by cyano;

R₂₄ and R₂₅ are each independently of the other hydrogen or C₁-C₄alkyl; and

Y is oxygen, sulfur, a chemical bond or a C₁-C₄alkylene bridge;

or is the group Q₃



wherein R₄₄, R₃₇, R₃₈ and R₃₉ are each independently of the others hydrogen, C₁-C₆alkyl, C₁-C₆haloalkyl, C₂-C₆alkenyl, C₂-C₆alkynyl, C₁-C₆alkoxycarbonyl, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆alkyl-NHS(O)₂, C₁-C₆alkylamino, di(C₁-C₆alkyl)amino, hydroxy, C₁-C₆alkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, hydroxy-C₁-C₆alkyl, C₁-C₄alkylsulfonyloxy-C₁-C₆alkyl, tosyloxy-C₁-C₆alkyl, halogen, cyano, nitro, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, amino, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₆alkylthio-N(C₁-C₄alkyl), C₁-C₆alkylsulfinyl-N(C₁-C₄alkyl), C₁-C₆alkylsulfonyl-N(C₁-C₄alkyl), halogen, nitro, COOH or by cyano; or adjacent R₄₄ and R₃₇ or R₃₈ and R₃₉ together are C₃-C₆alkylene;

W is oxygen, sulfur, sulfinyl, sulfonyl, -CR₄₁R₄₂-, -C(O)- or -NR₄₃-;

R₄₁ is hydrogen, C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy-C₁-C₄alkyl, C₁-C₄alkylthio-C₁-C₄alkyl, C₁-C₄alkylcarbonyloxy-C₁-C₄alkyl, C₁-C₄alkylsulfonyloxy-C₁-C₄alkyl, tosyloxy-C₁-C₄alkyl, di(C₁-C₃alkoxyalkyl)methyl, di(C₁-C₃alkylthioalkyl)methyl, (C₁-C₃alkoxyalkyl)-(C₁-C₃alkylthioalkyl)methyl, C₃-C₅oxacycloalkyl, C₃-C₅thiacycloalkyl, C₃-C₄dioxacycloalkyl, C₃-

C₄dithiacycloalkyl, C₃-C₄oxathiacycloalkyl, formyl, C₁-C₄alkoxycarbonyl, or phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, amino, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₆alkylthio-N(C₁-C₄alkyl), C₁-C₆alkylsulfinyl-N(C₁-C₄alkyl), C₁-C₆alkylsulfonyl-N(C₁-C₄alkyl), halogen, nitro, COOH or by cyano; or R₄₂ together with R₃₉ is C₁-C₆alkylene;

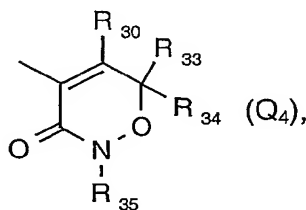
R₄₂ is hydrogen, C₁-C₄alkyl or C₁-C₄haloalkyl;

R₄₀ is hydroxy, O⁻M⁺, halogen, C₁-C₁₂alkoxy, C₁-C₁₂alkylcarbonyloxy, C₂-C₄alkenylcarbonyloxy, C₃-C₆cycloalkylcarbonyloxy, C₁-C₁₂alkoxycarbonyloxy, C₁-C₁₂alkylcarbonyloxy, R₉₆R₉₇N-C(O)O, C₁-C₁₂alkylthio, C₁-C₁₂alkylsulfinyl, C₁-C₁₂alkylsulfonyl, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₂-C₁₂alkenylthio, C₂-C₁₂alkenylsulfinyl, C₂-C₁₂alkenylsulfonyl, C₂-C₁₂haloalkenylthio, C₂-C₁₂haloalkenylsulfinyl, C₂-C₁₂haloalkenylsulfonyl, C₂-C₁₂alkynylthio, C₂-C₁₂alkynylsulfinyl, C₂-C₁₂alkynylsulfonyl, C₁-C₄alkyl-S(O)₂O, phenyl-S(O)₂O, (C₁-C₄alkoxy)₂P(O)O, C₁-C₄alkyl(C₁-C₄alkoxy)P(O)O, H(C₁-C₄alkoxy)P(O)O, C₁-C₁₂-alkyl-S(CO)O, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₄alkyl-S(O)₂N(C₁-C₄alkyl), halogen, nitro or by cyano;

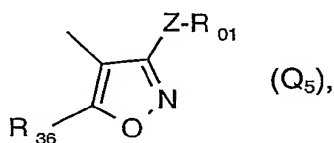
R₉₆ and R₉₇ are each independently of the other hydrogen or C₁-C₄alkyl;

R₄₃ is hydrogen, C₁-C₄alkyl, C₁-C₄alkoxycarbonyl, or phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₄alkyl-S(O)₂N(C₁-C₄alkyl), halogen, nitro or by cyano;

or is the group Q₄



wherein R_{30} hydroxy, O^-M^+ , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $R_{31}R_{32}N-C(O)O$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12} haloalkenylsulfonyl, C_2 - C_{12} alkynylthio, C_2 - C_{12} alkynylsulfinyl, C_2 - C_{12} alkynylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, phenyl- $S(O)_2O$, $(C_1$ - C_4 alkoxy) $_2P(O)O$, C_1 - C_4 alkyl(C_1 - C_4 alkoxy) $P(O)O$, $H(C_1$ - C_4 alkoxy) $P(O)O$, C_1 - C_{12} -alkyl- $S(CO)O$, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro or by cyano; and R_{31} and R_{32} are each independently of the other hydrogen or C_1 - C_4 alkyl; R_{33} and R_{34} are each independently of the other hydrogen, hydroxy, C_1 - C_4 alkyl, C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl-NHS(O) $_2$, C_1 - C_4 haloalkyl, -NH- C_1 - C_4 alkyl, -N(C_1 - C_4 alkyl) $_2$, C_1 - C_6 alkoxy, cyano, nitro, halogen, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano; or R_{33} and R_{34} together form a C_2 - C_6 alkylene bridge; and R_{35} is hydrogen, C_1 - C_4 alkyl, C_1 - C_4 alkoxycarbonyl, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano; or is the group Q_5



wherein Z is sulfur, SO or SO₂;

R₀₁ is hydrogen, C₁-C₈alkyl, C₁-C₈alkyl substituted by halogen, C₁-C₄alkoxy, C₁-C₄alkylthio, C₁-C₄alkylsulfonyl, C₁-C₄alkylsulfinyl, hydroxy, cyano, nitro, -CHO, -CO₂R₀₂, -COR₀₃, -COSR₀₄, -NR₀₅R₀₆, CONR₀₃₆R₀₃₇, or by phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₂₅R₀₂₆, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenepheryl or by -NR₀₁₅CO₂R₀₂₇;

or R₀₁ is C₂-C₈alkenyl or C₂-C₆alkenyl substituted by halogen, C₁-C₄alkoxy, C₁-C₄alkylthio, C₁-C₄alkylsulfonyl, C₁-C₄alkylsulfinyl, -CONR₀₃₂R₀₃₃, cyano, nitro, -CHO, -CO₂R₀₃₈, -COR₀₃₉, -COS-C₁-C₄alkyl, -NR₀₃₄R₀₃₅, or by phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₄₀R₀₄₁, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenepheryl or by -NR₀₄₃CO₂R₀₄₂;

or R₀₁ is C₃-C₆alkynyl or C₃-C₆alkynyl substituted by halogen, C₁-C₄haloalkyl, cyano, -CO₂R₀₄₄, or by phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl,

N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₂₈R₀₂₉, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenepheryl or by -NR₀₃₁CO₂R₀₃₀; or R₀₁ is C₃-C₇cycloalkyl or C₃-C₇cycloalkyl substituted by C₁-C₄alkyl, C₁-C₄alkoxy, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, or by phenyl which may itself be substituted by halogen, nitro, cyano, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylthio, C₁-C₄haloalkylthio, C₁-C₄alkyl or by C₁-C₄haloalkyl; or

R₀₁ is C₁-C₄alkylene-C₃-C₇cycloalkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₄₅R₀₄₆, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl or by -NR₀₄₈CO₂R₀₄₇; or

R₀₁ is C₁-C₄alkylenepheryl, COR₀₇ or from 4- to 6-membered heterocyclyl;

R₀₂, R₀₃₈, R₀₄₄ and R₀₆₆ are each independently of the others hydrogen, C₁-C₄alkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₄₉R₀₅₀, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, -C₁-C₄alkylphenyl or by -NR₀₅₂CO₂R₀₅₃;

R₀₃, R₀₃₉ and R₀₆₇ are each independently of the others C₁-C₄alkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)-SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)-SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₆₈R₀₅₄, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, -(CH₂)₁-phenyl or by -NR₀₅₆CO₂R₀₅₅;

R₀₄ is C₁-C₄alkyl;

R₀₅ is hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂H, N(C₃-C₆alkynyl)-SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂H, N(C₃-C₇cycloalkyl)-SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)-SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₅₇R₀₅₈, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenephenyl or by -NR₀₆₀CO₂R₀₅₉;

R₀₆ is hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)-SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)-

SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₆₁R₀₆₂, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenephényl or by -NR₀₆₄CO₂R₀₆₃;

R₀₇ is phenyl, C₁-C₄alkyl, C₁-C₄alkoxy or -NR₀₈R₀₉;

R₀₈ and R₀₉ are each independently of the other C₁-C₄alkyl, phenyl, or phenyl substituted by halogen, nitro, cyano, C₁-C₄alkyl, C₁-C₄alkoxy, C₁-C₄thioalkyl, -CO₂R₀₆₆, -COR₀₆₇, C₁-C₄alkylsulfonyl, C₁-C₄alkylsulfinyl or by C₁-C₄haloalkyl; or R₀₈ and R₀₉ together form a 5- or 6-membered ring, which may be interrupted by oxygen, NR₀₆₅ or by S;

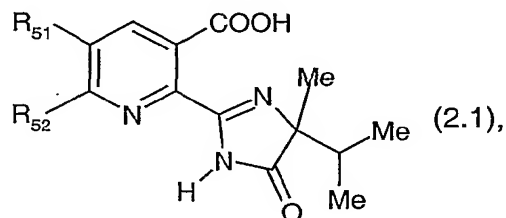
R₀₁₅, R₀₃₁, R₀₄₃, R₀₄₈, R₀₅₂, R₀₅₆, R₀₆₀ and R₀₆₄ are each independently of the others hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl or C₃-C₇cycloalkyl;

R₀₂₅, R₀₂₆, R₀₂₇, R₀₂₈, R₀₂₉, R₀₃₀, R₀₃₂, R₀₃₃, R₀₃₄, R₀₃₅, R₀₃₆, R₀₃₇, R₀₄₀, R₀₄₁, R₀₄₂, R₀₄₅, R₀₄₆, R₀₄₇, R₀₄₉, R₀₅₀, R₀₅₃, R₀₅₄, R₀₅₅, R₀₅₇, R₀₅₈, R₀₅₉, R₀₆₁, R₀₆₂, R₀₆₃, R₀₆₅ and R₀₆₈ are each independently of the others hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by halogen, nitro, cyano, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylthio, C₁-C₄haloalkylthio, C₁-C₄alkyl or by C₁-C₄haloalkyl; and

R₃₆ is C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl, or C₃-C₆cycloalkyl substituted by halogen, C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄alkylcarbonyl, di(C₁-C₄alkyl)amino, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkyl-S(O)₂O, or by phenyl which may itself be substituted by halogen, C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆alkynyl, cyano, nitro or by COOH;

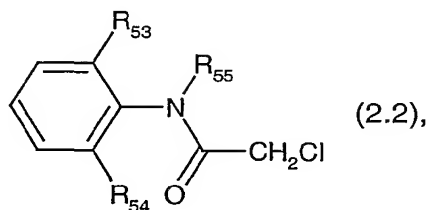
or an agronomically acceptable salt of such a compound, and

b) a synergistically effective amount of one or more compounds selected from a compound of formula 2.1

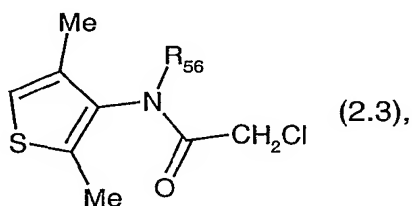


wherein R₅₁ is CH₂-OMe, ethyl or hydrogen;

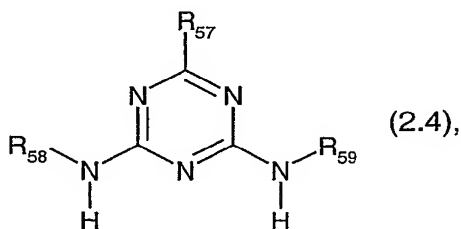
R_{52} is hydrogen or R_{51} and R_{52} together are the group $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$;
and a compound of formula 2.2



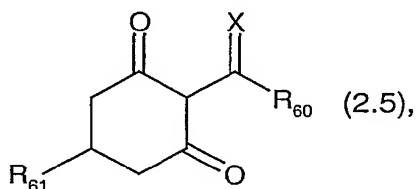
wherein R_{53} is ethyl, R_{54} is methyl or ethyl and R_{55} is $-\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$,
 $<\text{S}>-\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$, CH_2OMe or $\text{CH}_2\text{O}-\text{CH}_2\text{CH}_3$;
and a compound of formula 2.3



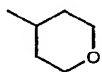
wherein R_{56} is $\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$ or $<\text{S}>\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$;
and a compound of formula 2.4



wherein R_{57} is chlorine, methoxy or methylthio, R_{58} is ethyl and R_{59} is ethyl, isopropyl,
 $-\text{C}(\text{CN})(\text{CH}_3)-\text{CH}_3$ or tert-butyl;
and a compound of formula 2.5

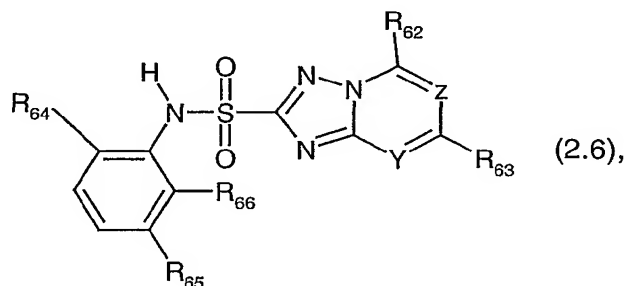


wherein R_{60} is ethyl or n-propyl, R_{61} is $\text{COO}^- 1/2 \text{Ca}^{++}$, $-\text{CH}_2-\text{CH}(\text{Me})\text{S}-\text{CH}_2\text{CH}_3$ or the group



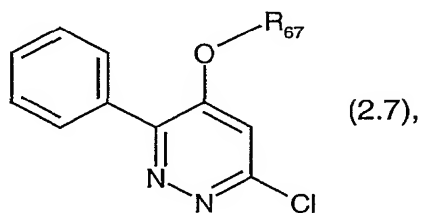
and X is oxygen, $\text{N}-\text{O}-\text{CH}_2\text{CH}_3$ or $\text{N}-\text{O}-\text{CH}_2\text{CH}=\text{CH}-\text{Cl}$;

and a compound of formula 2.6



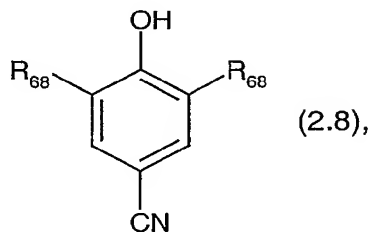
wherein R_{62} is hydrogen, methoxy or ethoxy, R_{63} is hydrogen, methyl, methoxy or fluorine, R_{64} is COOMe , fluorine or chlorine, R_{65} is hydrogen or methyl, Y is methine, C-F or nitrogen, Z is methine or nitrogen and R_{66} is fluorine or chlorine;

and a compound of formula 2.7



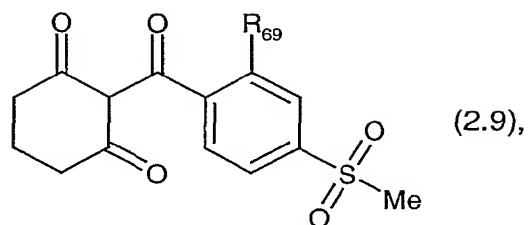
wherein R_{67} is hydrogen or $-\text{C}(\text{O})-\text{S}-n\text{-octyl}$;

and a compound of formula 2.8

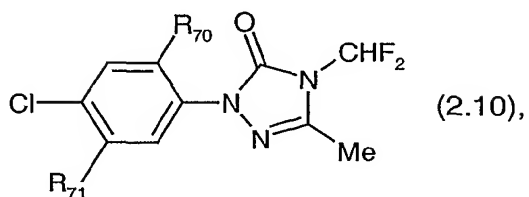


wherein R_{68} is either bromine or iodine;

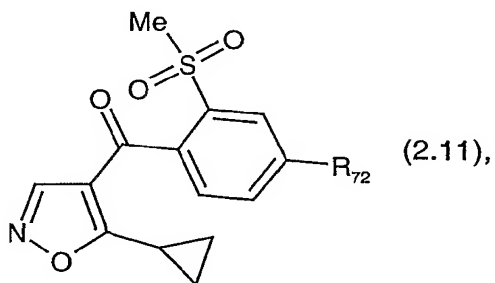
and a compound of formula 2.9



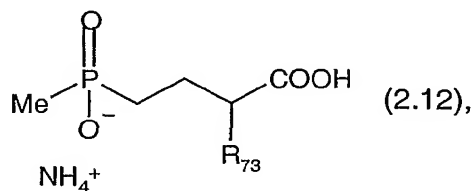
wherein R_{69} is chlorine or nitro;
and a compound of formula 2.10



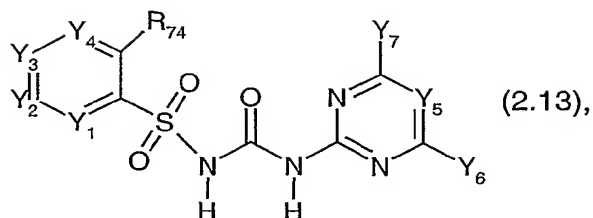
wherein R_{70} is fluorine or chlorine and R_{71} is $-\text{CH}_2-\text{CH}(\text{Cl})-\text{COOCH}_2\text{CH}_3$ or $-\text{NH}-\text{SO}_2\text{Me}$;
and a compound of formula 2.11



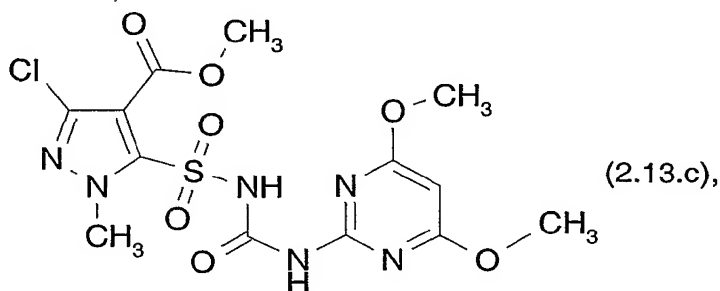
wherein R_{72} is trifluoromethyl or chlorine;
and a compound of formula 2.12



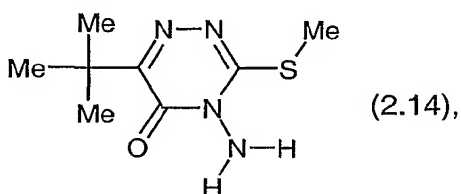
wherein R_{73} is NH_2 or $<\text{S}>\text{NH}_2$;
and a compound of formula 2.13



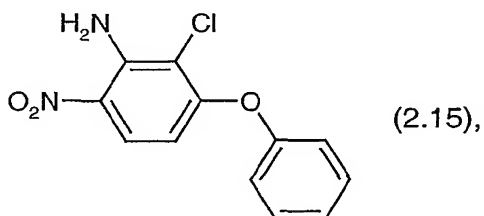
wherein Y_1 is nitrogen, methine, NH-CHO or N-Me, Y_2 is nitrogen, methine or C-I, Y_3 is methine, Y_4 is methine or Y_3 and Y_4 together are sulfur or C-Cl, Y_5 is nitrogen or methine, Y_6 is methyl, difluoromethoxy, trifluoromethyl or methoxy, Y_7 is methoxy or difluoromethoxy and R_{74} is CONMe_2 , COOMe , COOC_2H_5 , trifluoromethyl, $\text{CH}_2\text{-CH}_2\text{CF}_3$ or $\text{SO}_2\text{CH}_2\text{CH}_3$, or a sodium salt thereof ("Me" being in each case the methyl group);
and the compound of formula 2.13.c



and the compound of formula 2.14

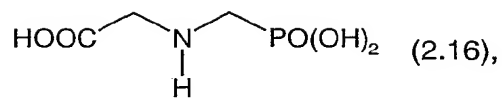


and the compound of formula 2.15

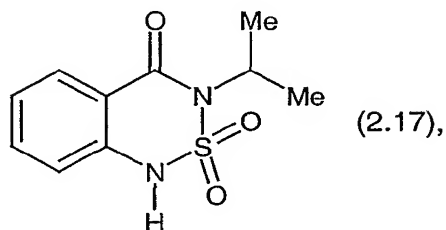


and the compound of formula 2.16

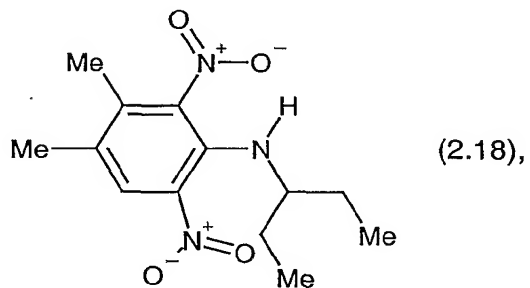
- 16 -



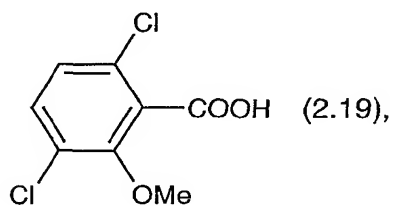
and the compound of formula 2.17



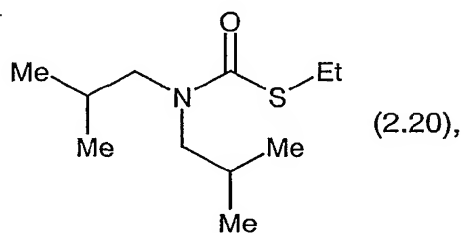
and the compound of formula 2.18



and the compound of formula 2.19

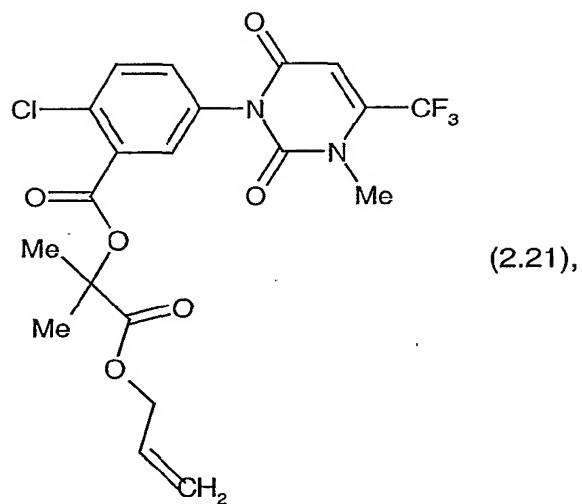


and the compound of formula 2.20

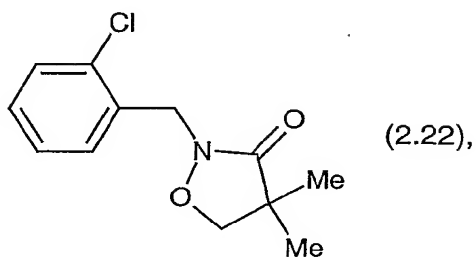


and the compound of formula 2.21

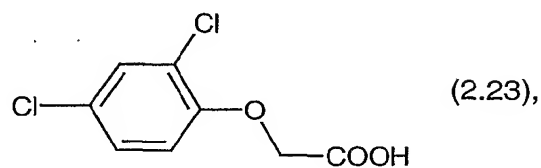
- 17 -



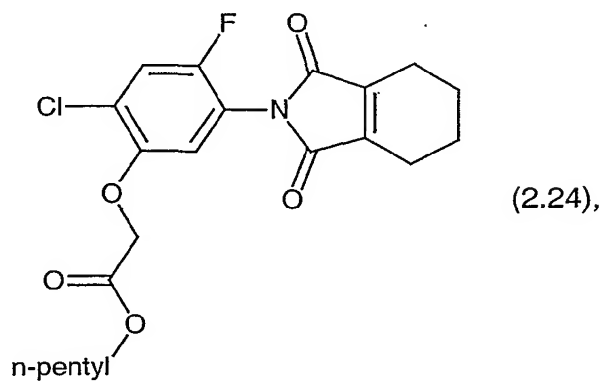
and the compound of formula 2.22



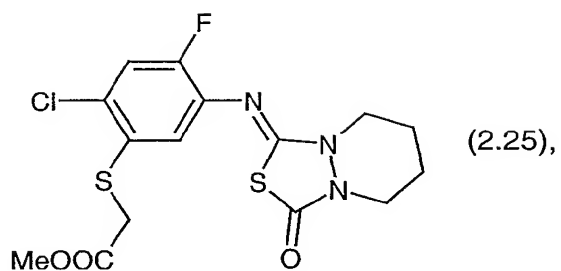
and the compound of formula 2.23



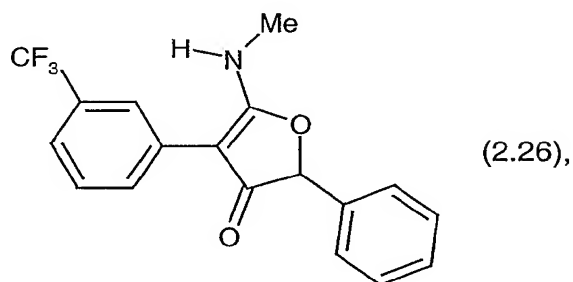
and the compound of formula 2.24



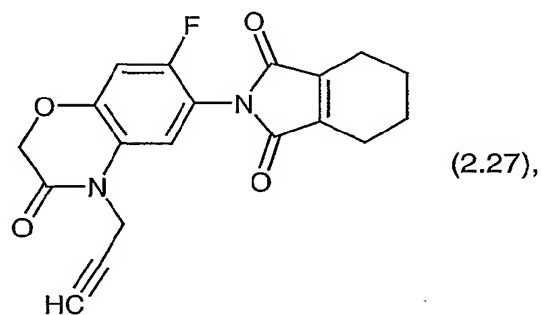
and the compound of formula 2.25



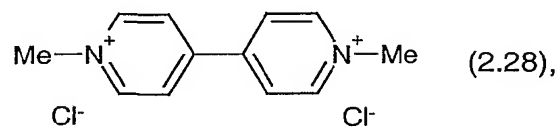
and the compound of formula 2.26



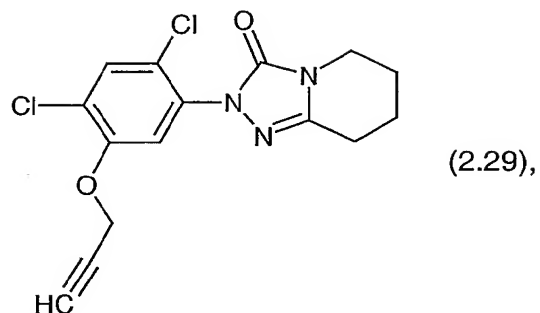
and the compound of formula 2.27



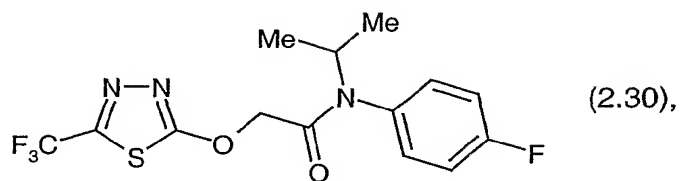
and the compound of formula 2.28



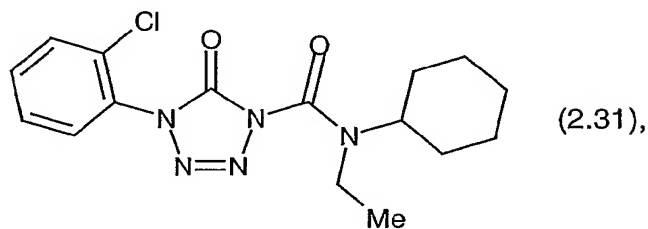
and the compound of formula 2.29



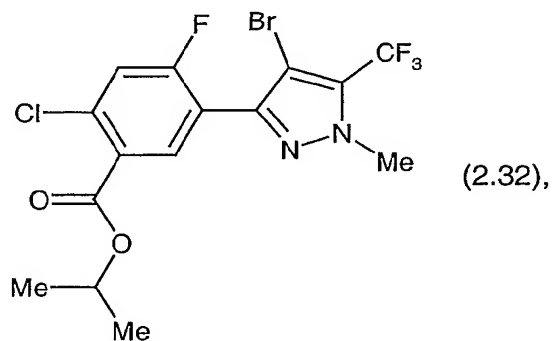
and the compound of formula 2.30



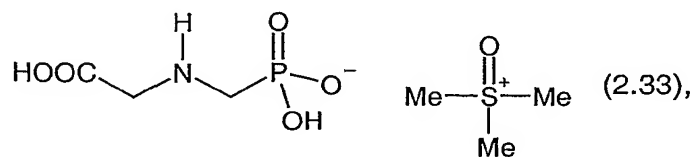
and the compound of formula 2.31



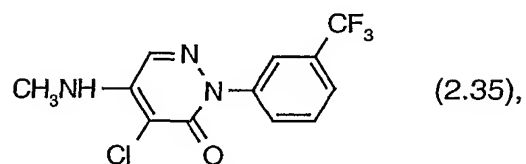
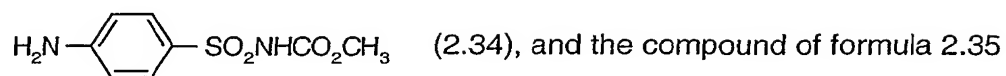
and the compound of formula 2.32



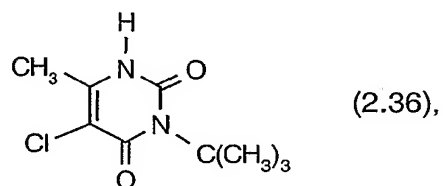
and the compound of formula 2.33



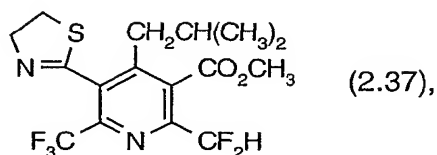
and the compound of formula 2.34



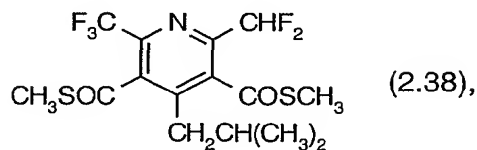
and the compound of formula 2.36



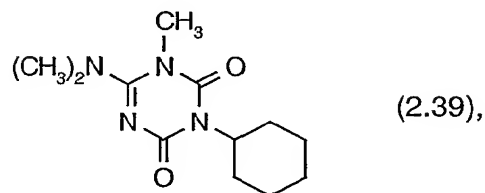
and the compound of formula 2.37



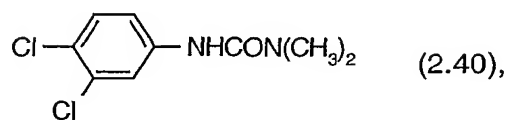
and the compound of formula 2.38



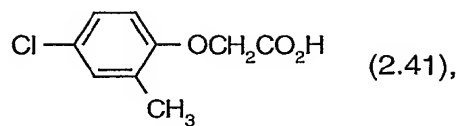
and the compound of formula 2.39



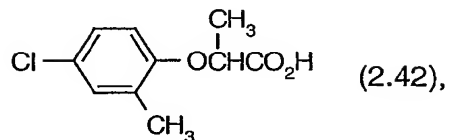
and the compound of formula 2.40



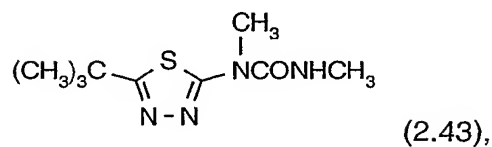
and the compound of formula 2.41



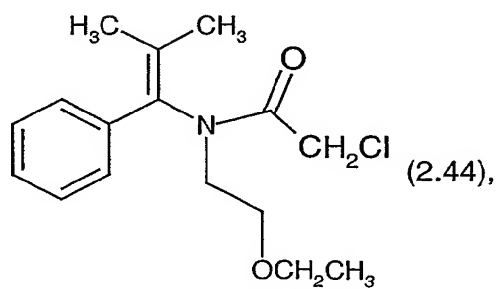
and the compound of formula 2.42



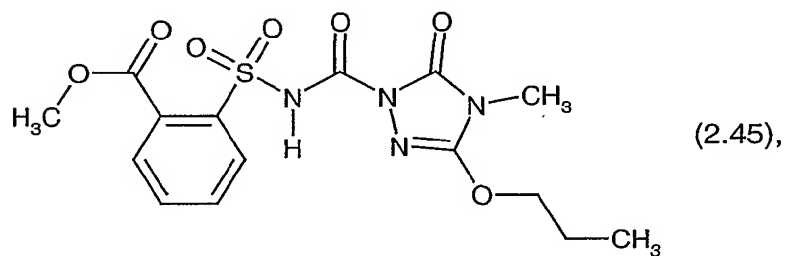
and the compound of formula 2.43



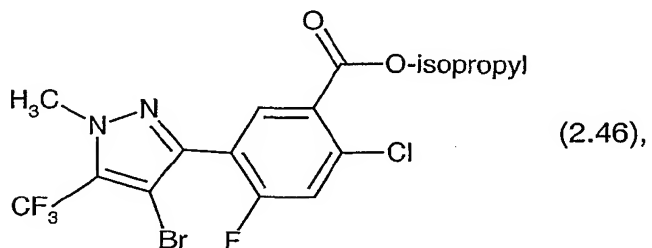
and the compound of formula 2.44



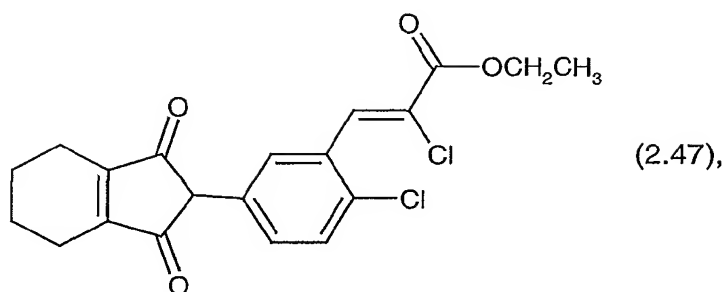
and the compound of formula 2.45



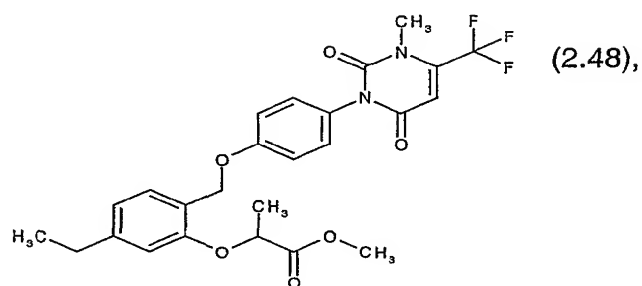
and the compound of formula 2.46



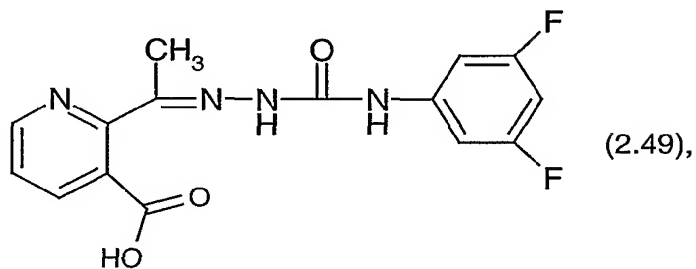
and the compound of formula 2.47



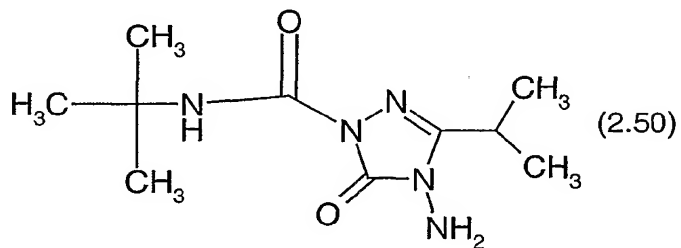
and the compound of formula 2.48



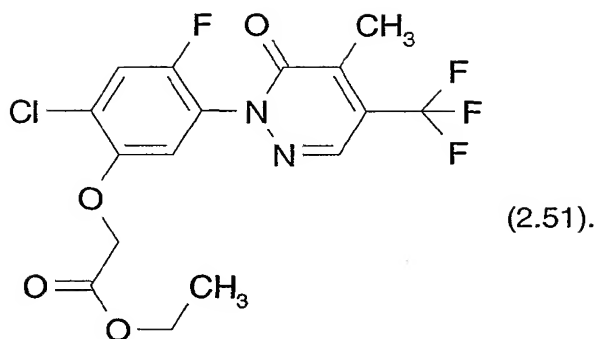
and the compound of formula 2.49



and the compound of formula 2.50



and the compound of formula 2.51



In the above formulae, "Me" is a methyl group. The alkyl groups appearing in the substituent definitions may be straight-chained or branched and are, for example, methyl, ethyl, n-propyl, isopropyl, n-butyl, sec-butyl, isobutyl, tert-butyl, pentyl, hexyl, heptyl, octyl, nonyl, decyl, undecyl and dodecyl and also branched isomers thereof. Alkoxy, alkenyl and alkynyl radicals are derived from the mentioned alkyl radicals. The alkenyl and alkynyl groups may be unsaturated once or more than once.

An alkylene group may be substituted by one or more methyl groups; preferably, such alkylene groups are unsubstituted in each case. The same also applies to all C₃-C₅cycloalkyl-, C₃-C₅oxacycloalkyl-, C₃-C₅thiacycloalkyl-, C₃-C₄dioxacycloalkyl-, C₃-C₄dithiacycloalkyl-, C₃-C₄oxathiacycloalkyl- and N(CH₂)-containing groups.

Halogen is, generally, fluorine, chlorine, bromine or iodine. The same correspondingly applies to halogen in the context of other definitions, such as haloalkyl or halophenyl.

Haloalkyl groups having a chain length of from 1 to 6 carbon atoms are, for example, fluoromethyl, difluoromethyl, trifluoromethyl, chloromethyl, dichloromethyl, trichloromethyl, 2,2,2-trifluoroethyl, 2-fluoroethyl, 2-chloroethyl, pentafluoroethyl, 1,1-difluoro-2,2,2-trichloroethyl, 2,2,3,3-tetrafluoroethyl and 2,2,2-trichloroethyl, pentafluoroethyl, heptafluoro-n-propyl, perfluoro-n-hexyl; haloalkyl groups in the definitions of R₂, R₃ and especially R₅ are preferably trichloromethyl, dichlorofluoromethyl, difluorochloromethyl, difluoromethyl, trifluoromethyl, pentafluoroethyl or heptafluoro-n-propyl.

Suitable haloalkenyl radicals include alkenyl groups substituted one or more times by halogen, halogen being fluorine, chlorine, bromine or iodine and especially fluorine or chlorine, for example 2,2-difluoro-1-methylvinyl, 3-fluoropropenyl, 3-chloropropenyl, 3-bromopropenyl, 2,3,3-trifluoropropenyl, 2,3,3-trichloropropenyl and 4,4,4-trifluorobut-2-en-1-yl. Preferred C₂-C₁₂alkenyl radicals substituted once, twice or three times by halogen are those having a chain length of from 2 to 5 carbon atoms. Suitable haloalkynyl radicals

include, for example, alkynyl groups substituted one or more times by halogen, halogen being bromine or iodine and, especially, fluorine or chlorine, for example 3-fluoropropynyl, 3-chloropropynyl, 3-bromopropynyl, 3,3,3-trifluoropropynyl and 4,4,4-trifluoro-but-2-yn-1-yl. Preferred alkynyl groups substituted one or more times by halogen are those having a chain length of from 2 to 5 carbon atoms.

Alkoxy groups preferably have a chain length of from 1 to 6 carbon atoms. Alkoxy is, for example, methoxy, ethoxy, propoxy, isopropoxy, n-butoxy, isobutoxy, sec-butoxy or tert-butoxy or a pentyloxy or hexyloxy isomer, preferably methoxy and ethoxy. Alkylcarbonyl is preferably acetyl or propionyl. Alkoxy carbonyl is, for example, methoxycarbonyl, ethoxycarbonyl, propoxycarbonyl, isopropoxycarbonyl, n-butoxycarbonyl, isobutoxycarbonyl, sec-butoxycarbonyl or tert-butoxycarbonyl, preferably methoxycarbonyl, ethoxycarbonyl or tert-butoxycarbonyl. Haloalkoxy groups preferably have a chain length of from 1 to 8 carbon atoms.

Haloalkoxy is, for example, fluoromethoxy, difluoromethoxy, trifluoromethoxy, 2,2,2-trifluoroethoxy, 1,1,2,2-tetrafluoroethoxy, 2-fluoroethoxy, 2-chloroethoxy, 2,2-difluoroethoxy or 2,2,2-trichloroethoxy, preferably difluoromethoxy, 2-chloroethoxy or trifluoromethoxy.

Alkylthio groups preferably have a chain length of from 1 to 8 carbon atoms.

Alkylthio is, for example, methylthio, ethylthio, propylthio, isopropylthio, n-butylthio, isobutylthio, sec-butylthio or tert-butylthio, preferably methylthio or ethylthio. Alkylsulfinyl is, for example, methylsulfinyl, ethylsulfinyl, propylsulfinyl, isopropylsulfinyl, n-butylsulfinyl, isobutylsulfinyl, sec-butylsulfinyl or tert-butylsulfinyl, preferably methylsulfinyl or ethylsulfinyl.

Alkylsulfonyl is, for example, methylsulfonyl, ethylsulfonyl, propylsulfonyl, isopropylsulfonyl, n-butylsulfonyl, isobutylsulfonyl, sec-butylsulfonyl or tert-butylsulfonyl, preferably methylsulfonyl or ethylsulfonyl.

Alkylamino is, for example, methylamino, ethylamino, n-propylamino, isopropylamino or a butylamine isomer. Dialkylamino is, for example, dimethylamino, methylethylamino, diethylamino, n-propylmethylamino, dibutylamino or diisopropylamino. Preference is given to alkylamino groups having a chain length of from 1 to 4 carbon atoms. Alkoxyalkyl groups preferably have from 1 to 6 carbon atoms. Alkoxyalkyl is, for example, methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, n-propoxymethyl, n-propoxyethyl, isopropoxymethyl or isopropoxyethyl. Alkylthioalkyl groups preferably have from 1 to 6 carbon atoms. Alkylthioalkyl is, for example, methylthiomethyl, methylthioethyl, ethylthiomethyl, ethylthio-

ethyl, n-propylthiomethyl, n-propylthioethyl, isopropylthiomethyl, isopropylthioethyl, butylthiomethyl, butylthioethyl or butylthiobutyl.

The cycloalkyl groups preferably have from 3 to 6 ring carbon atoms and may be substituted by one or more methyl groups; they are preferably unsubstituted, for example cyclopropyl, cyclobutyl, cyclopentyl or cyclohexyl. Phenyl, including phenyl as part of a substituent such as phenoxy, benzyl, benzyloxy, benzoyl, phenylthio, phenylalkyl, phenoxyalkyl or tosyl, may be in mono- or poly-substituted form, in which case the substituents may, as desired, be in the ortho-, meta- and/or para-position(s).

The invention also includes the salts that the compounds of formula I may form with amines, alkali metal and alkaline earth metal bases or quaternary ammonium bases. Among the alkali metal and alkaline earth metal hydroxides used as salt formers, emphasis is to be given to the hydroxides of lithium, sodium, potassium, magnesium and calcium, but especially those of sodium and potassium.

Examples of suitable amines for ammonium salt formation that come into consideration are ammonia as well as primary, secondary and tertiary C₁-C₁₈alkylamines, C₁-C₄hydroxyalkylamines and C₂-C₄alkoxyalkylamines, for example methylamine, ethylamine, n-propylamine, isopropylamine, the four butylamine isomers, n-amylamine, isoamylamine, hexylamine, heptylamine, octylamine, nonylamine, decylamine, pentadecylamine, hexadecylamine, heptadecylamine, octadecylamine, methyl-ethylamine, methyl-isopropylamine, methyl-hexylamine, methyl-nonylamine, methyl-pentadecylamine, methyl-octadecylamine, ethyl-butylamine, ethyl-heptylamine, ethyl-octylamine, hexyl-heptylamine, hexyl-octylamine, dimethylamine, diethylamine, di-n-propylamine, diisopropylamine, di-n-butylamine, di-n-amylamine, diisoamylamine, dihexylamine, diheptylamine, dioctylamine, ethanolamine, n-propanolamine, isopropanolamine, N,N-diethanolamine, N-ethylpropanolamine, N-butyl-ethanolamine, allylamine, n-butenyl-2-amine, n-pentenyl-2-amine, 2,3-dimethylbutenyl-2-amine, dibutenyl-2-amine, n-hexenyl-2-amine, propylenediamine, trimethylamine, triethylamine, tri-n-propylamine, triisopropylamine, tri-n-butylamine, triisobutylamine, tri-sec-butylamine, tri-n-amylamine, methoxyethylamine and ethoxyethylamine; heterocyclic amines, for example pyridine, quinoline, isoquinoline, morpholine, piperidine, pyrrolidine, indoline, quinuclidine and azepine; primary aryl amines for example anilines, methoxyanilines, ethoxyanilines, o-, m- and p-toluidines, phenylenediamines, benzidines, naphthylamines and

o-, m- and p-chloroanilines; but especially triethylamine, isopropylamine and diisopropylamine.

It is extremely surprising that the combination of the active ingredient of formula I with one or more active ingredients selected from formulae 2.1 to 2.51 exceeds the additive effect on the weeds to be controlled that is to be expected in principle, and thus broadens the range of action of the individual active ingredients especially in two respects: Firstly, the rates of application of the individual compounds of formulae 1 and 2.1 to 2.51 are reduced while a good level of action is maintained and, secondly, the composition according to the invention achieves a high level of weed control also in those cases where the individual substances, in the range of low rates of application, have become unusable from the agronomic standpoint. The result is a considerable broadening of the spectrum of weeds and an additional increase in selectivity in respect of the crops of useful plants, as is necessary and desirable in the event of an unintentional overdose of active ingredient. The composition according to the invention, while retaining excellent control of weeds in crops of useful plants, also enables greater flexibility in succeeding crops.

The composition according to the invention can be used against a large number of agronomically important weeds, such as *Stellaria*, *Nasturtium*, *Agrostis*, *Digitaria*, *Avena*, *Setaria*, *Sinapis*, *Lolium*, *Solanum*, *Phaseolus*, *Echinochloa*, *Scirpus*, *Monochoria*, *Sagittaria*, *Bromus*, *Alopecurus*, *Sorghum halepense*, *Rottboellia*, *Cyperus*, *Abutilon*, *Sida*, *Xanthium*, *Amaranthus*, *Chenopodium*, *Ipomoea*, *Chrysanthemum*, *Galium*, *Viola* and *Veronica*. The composition according to the invention is suitable for all methods of application conventionally used in agriculture, e.g. pre-emergence application, post-emergence application and seed dressing. The composition according to the invention is suitable especially for controlling weeds in crops of useful plants, such as cereals, rape, sugar beet, sugar cane, plantation crops, rice, maize and soybeans, and also for non-selective weed control.

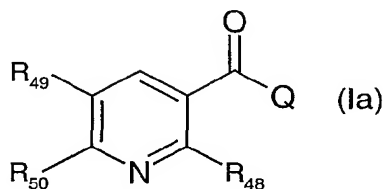
"Crops" are to be understood to mean also those crops which have been made tolerant to herbicides or classes of herbicides as a result of conventional methods of breeding or genetic engineering.

Preferred compositions according to the invention comprise compounds of formula I wherein

each R is independently hydrogen, C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₁-C₆alkoxycarbonyl, C₁-C₆alkylcarbonyl, C₁-C₆alkylamino, di(C₁-C₆alkyl)-amino, C₁-C₆alkylaminosulfonyl, di(C₁-C₆alkyl)aminosulfonyl, -N(R₁)-S-R₂, -N(R₃)-SO-R₄, -N(R₅)-SO₂-R₆, nitro, cyano, halogen, hydroxy, amino, benzylthio, benzylsulfinyl, benzylsulfonyl, phenyl, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl; wherein the phenyl group may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₄₅, NR₄₆R₄₇, halogen, cyano, nitro, phenyl or by benzylthio, wherein the latter phenyl and benzylthio groups may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

or each R is independently a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur; wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring *via* a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen.

Compositions according to the invention that are also preferred comprise, as compound of formula I, a compound of formula Ia



wherein

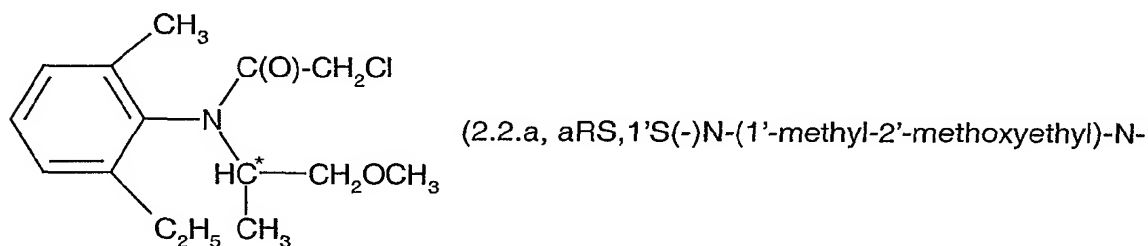
R₄₈ is C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆haloalkyl, or a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur, wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring *via* a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen;

R₄₉ is hydrogen, C₁-C₆alkyl, C₁-C₆haloalkyl, halogen, or phenyl which may be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and R₅₀ is C₁-C₆haloalkyl.

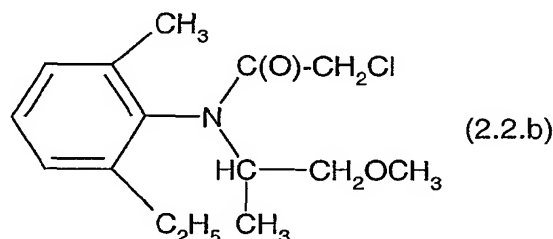
Among that group of compounds preference is given to those wherein R₄₈ is C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl or C₁-C₆haloalkyl.

Preference is given also to compositions wherein, in formula I, Q is the group Q₂ or Q₃, wherein, especially, in the group Q₂ R₂₃ is hydroxy and in the group Q₃ R₄₀ is hydroxy. Among that group emphasis is to be given to those compounds wherein m is 2 and one substituent R is C₁-C₄alkoxy-C₁-C₄alkyl or C₁-C₄alkoxy-C₁-C₄alkoxy-C₁-C₄alkyl.

Further preferred synergistic mixtures according to the invention comprise as active ingredients a compound of formula I and either a compound of formula 2.2.a

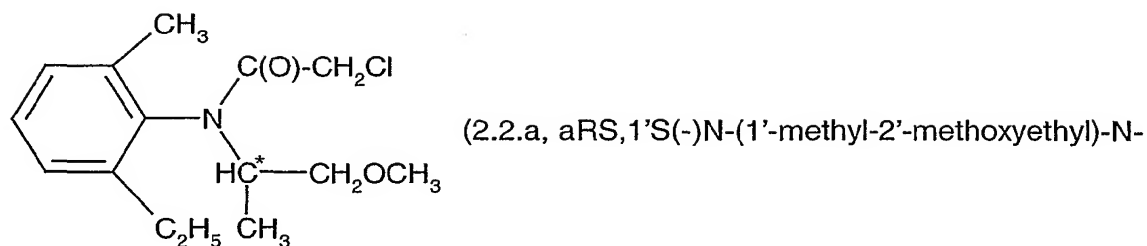


chloroacetyl-2-ethyl-6-methylaniline), or a compound of formula 2.2.b

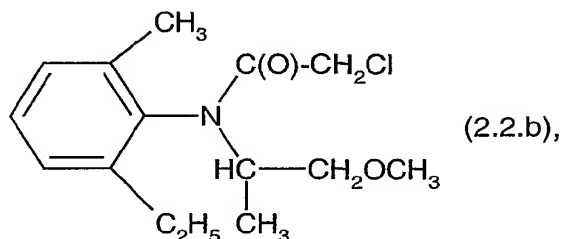


or a compound of formula 2.2 wherein R₃ is ethyl, R₄ is methyl and R₅ is ethoxymethyl, or a compound of formula 2.2 wherein R₃ is ethyl, R₄ is ethyl and R₅ is methoxymethyl, or a compound 2.3, or a compound of formula 2.30, or a compound of formula 2.4, or a compound of formula 2.13, or a compound of formula 2.14, or a compound of formula 2.6 wherein R₁₂ is hydrogen, Z is methine, R₁₃ is methyl, Y is nitrogen, R₁₄ is fluorine, R₁₅ is hydrogen and R₁₆ is fluorine, or R₁₂ is methoxy, Z is methine, R₁₃ is methoxy, Y is methine, R₁₄ is chlorine, R₁₅ is methyl and R₁₆ is chlorine, or a compound of formula 2.7 wherein R₁₇ is -C(O)-S-n-octyl, or a compound of formula 2.12, or a compound of formula 2.18, or a compound of formula 2.19, or a compound of formula 2.21, or a compound of formula 2.25, or a compound of formula 2.33, or a compound of formula 2.45, or a compound of formula 2.1.

Especially preferred synergistic mixtures according to the invention comprise as active ingredients a compound of formula I and either a compound of formula 2.2.a

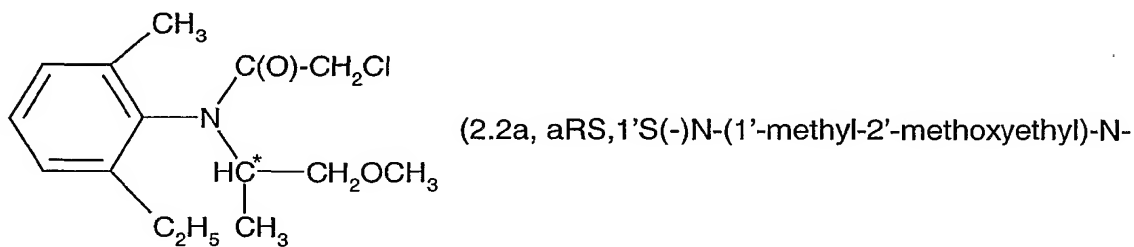


chloroacetyl-2-ethyl-6-methylaniline), or a compound of formula 2.2.b



or a compound of formula 2.2 wherein R₃ is ethyl, R₄ is methyl and R₅ is ethoxymethyl, or a compound of formula 2.2 wherein R₃ is ethyl, R₄ is ethyl and R₅ is methoxymethyl, or a compound of formula 2.3, or a compound of formula 2.30.

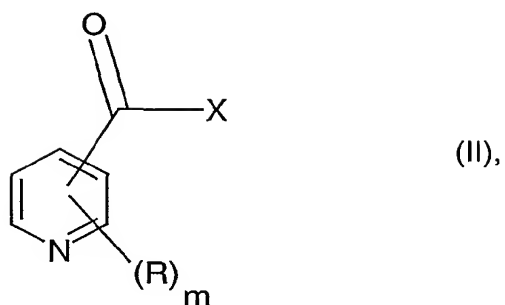
Combinations of the compounds of formula I with the compound of formula 2.2a



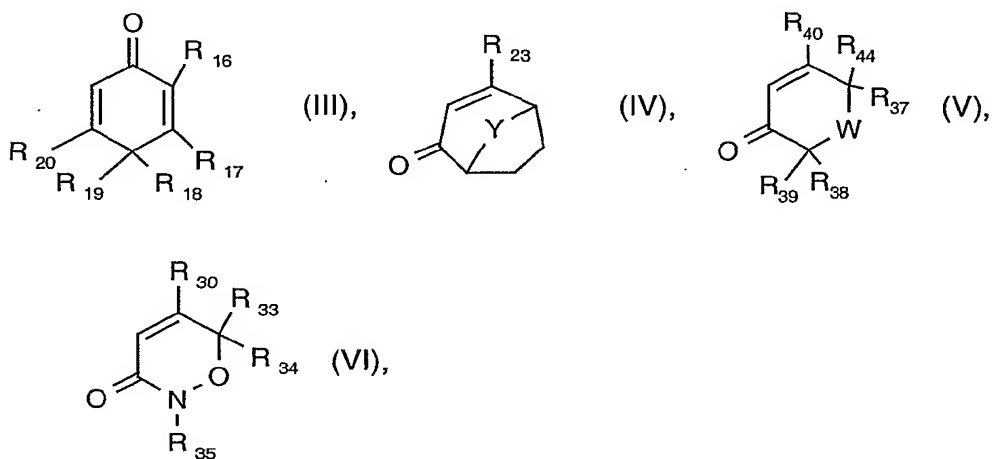
chloroacetyl-2-ethyl-6-methylaniline) have been found to be especially effective, the compound 1.001 indicated hereinbelow under Table 1 being especially preferred as the compound of formula I.

The compounds of formula I can be prepared in a manner analogous to the processes described in WO 97/46530, by

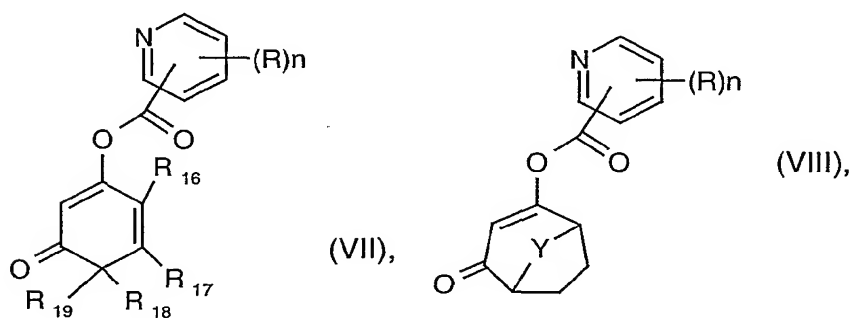
a) reacting a compound of formula II

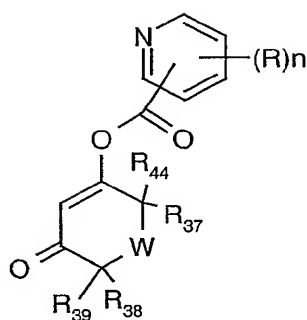


wherein R and m are as defined for formula I and X is a leaving group, e.g. halogen, in an inert, organic solvent in the presence of a base, with compounds of formula III, IV, V or VI

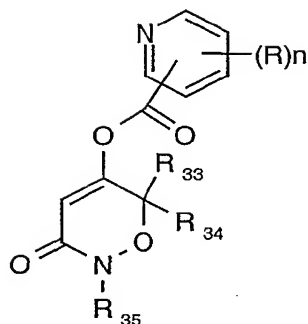


wherein R_{20} , R_{23} , R_{30} and R_{40} are hydroxy and the other substituents are as defined for formula I, to form the compounds of formula VII, VIII, IX or X





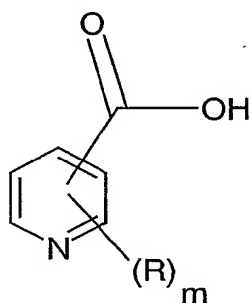
(IX),



(X),

and then isomerising those compounds, for example in the presence of a base and a catalytic amount of dimethylaminopyridine (DMAP) or a cyanide source; or

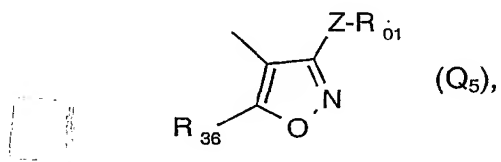
b) reacting a compound of formula XI



(XI),

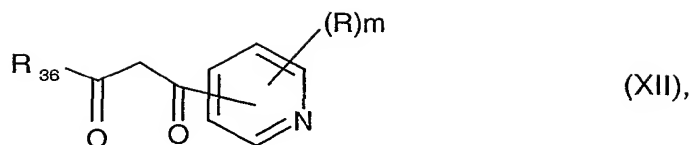
wherein R and m are as defined for formula I, with compounds of formula III, IV, V or VI in an inert, organic solvent in the presence of a base and a coupling agent, to form the compound of formula VII, VIII, IX or X, and then isomerising that compound, for example in the manner described under route a).

Compounds of formula I wherein Q is a group Q₅

(Q₅),

wherein Z is sulfur and R₃₆ and R₀₁ are as defined for formula I, can be prepared in a manner analogous to known processes (e.g. those described in WO 97/43270), by either

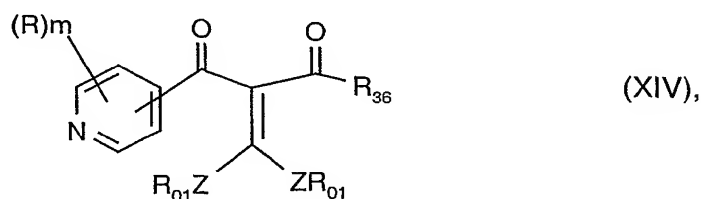
a) converting a compound of formula XII



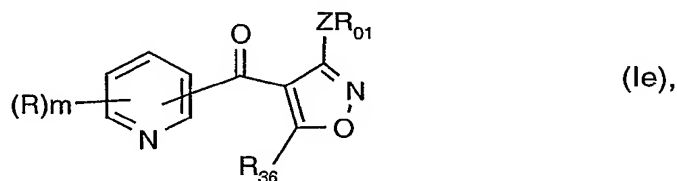
wherein R_{36} , R and m are as defined, in the presence of a base, carbon disulfide and an alkylating reagent of formula XIII



wherein R_{01} is as defined for formula I and X_1 is a leaving group, e.g. halogen or sulfonate, into the compound of formula XIV



wherein Z is sulfur and R , R_{01} , R_{36} and m are as defined, and then cyclising that compound with hydroxylamine hydrochloride, optionally in a solvent, in the presence of a base, to form the compound of formula Ie

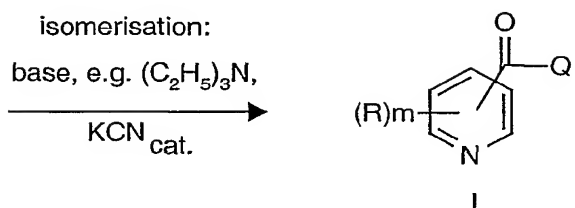
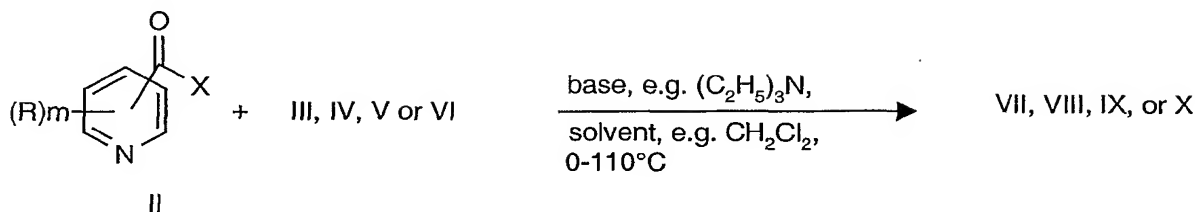


wherein Z is sulfur and R , R_{36} , R_{01} and m are as defined, and then oxidising that compound with an oxidising agent, e.g. meta-chloroperoxybenzoic acid (m-CPBA).

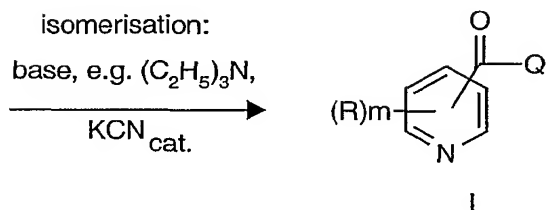
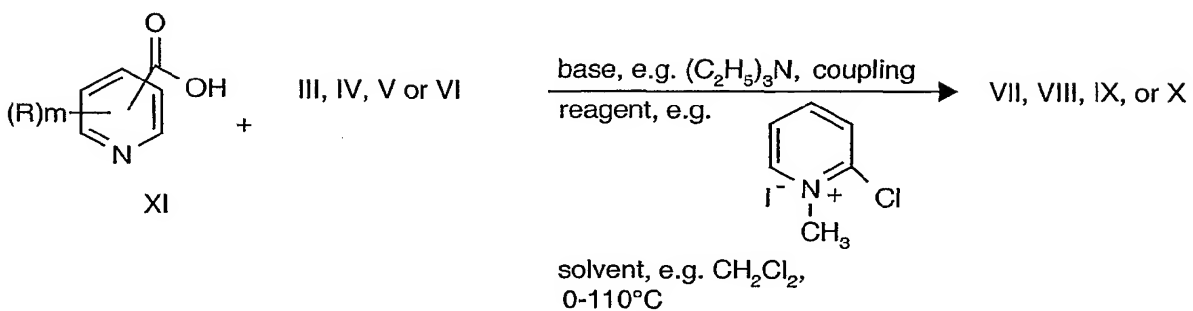
Preparation of the compounds of formula I is illustrated in greater detail in the following Reaction Schemes 1 and 2.

Reaction Scheme 1

route a):

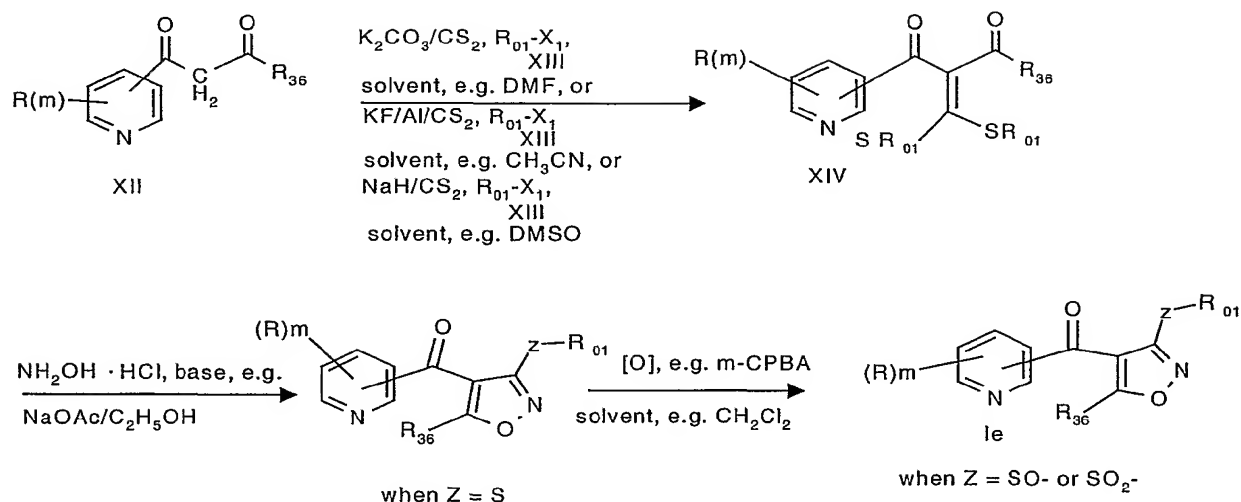


route b):

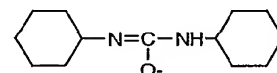


The compounds of formula I containing the groups Q₁, Q₂, Q₃ and Q₄ wherein R₂₀, R₂₃, R₃₀ and R₄₀ are hydroxy can especially be prepared according to the above Reaction Scheme.

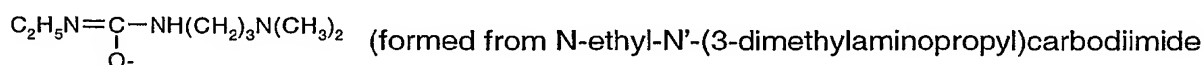
Reaction Scheme 2



For preparation of the compounds of formula I wherein Q is a group Q_1 to Q_4 and R_{20} , R_{23} , R_{30} and R_{40} are hydroxy, there are used as starting materials, in accordance with Reaction Scheme 1, route a), the carboxylic acid derivatives of formula II wherein X is a leaving group, for example halogen, e.g. iodine, bromine or especially chlorine, N-oxyphthalimide or N,O-dimethylhydroxylamino or a moiety of an activated ester, for example



(formed from dicyclohexylcarbodiimide (DCC) and the appropriate carboxylic acid) or



(EDC) and the appropriate carboxylic acid). Those compounds are reacted in an inert, organic solvent, for example a halogenated hydrocarbon, e.g. dichloromethane, a nitrile, e.g. acetonitrile, or an aromatic hydrocarbon, e.g. toluene, and in the presence of a base, for example an alkylamine, e.g. triethylamine, an aromatic amine, e.g. pyridine or 4-dimethylaminopyridine (DMAP), with the dione derivatives of formula III, IV, V or VI to form the isomeric enol ethers of formula VII, VIII, IX and X. The esterification occurs at temperatures of from $0^\circ C$ to $110^\circ C$.

The isomerisation of the ester derivatives of formulae VII, VIII, IX and X to form the dione derivatives of formula I (wherein R_{20} , R_{23} , R_{30} and R_{40} are hydroxy) can be carried out, for example, analogously to EP 369 803 in the presence of a base, for example an alkylamine, e.g. triethylamine, a carbonate, e.g. potassium carbonate, and a catalytic amount of DMAP or a cyanide source, for example acetone cyanohydrin or potassium cyanide.

According to Reaction Scheme 1, route b), the desired diones of formula I (wherein R_{20} , R_{23} , R_{30} and R_{40} are hydroxy) can be obtained, for example, analogously to Chem. Lett. 1975, 1045 by means of esterification of the carboxylic acids of formula XI with the dione derivatives of formula III, IV, V or VI in an inert solvent, for example a halogenated hydrocarbon, e.g. dichloromethane, a nitrile, e.g. acetonitrile, or an aromatic hydrocarbon, e.g. toluene, in the presence of a base, for example an alkylamine, e.g. triethylamine, and a coupling agent, for example 2-chloro-1-methyl-pyridinium iodide. The esterification occurs, depending on the solvent used, at temperatures of from 0°C to 110°C and yields first, as described under route a), the isomeric ester of formula I, which can be isomerised, as described under route a), for example in the presence of a base and a catalytic amount of DMAP, or a cyanide source to form the desired dione derivatives of formula I (wherein R_{20} , R_{23} , R_{30} and R_{40} are hydroxy).

Preparation of the compounds of formula I wherein Q is the group Q_5 can be carried out in accordance with Reaction Scheme 2, by reacting the b-diketone derivative of formula XII, for example analogously to Synthesis 1991, 301; *ibid.* 1988, 793; or Tetrahedron 32, 3055 (1976), with carbon disulfide in the presence of a base, for example a carbonate, e.g. potassium carbonate, a metal hydride, e.g. sodium hydride, or potassium fluoride on aluminium, and an alkylating reagent of formula XIII, wherein X_1 is a leaving group, for example halogen, e.g. iodine, bromine or especially chlorine, $R_{25}OSO_2O^-$, $CH_3SO_2O^-$ or

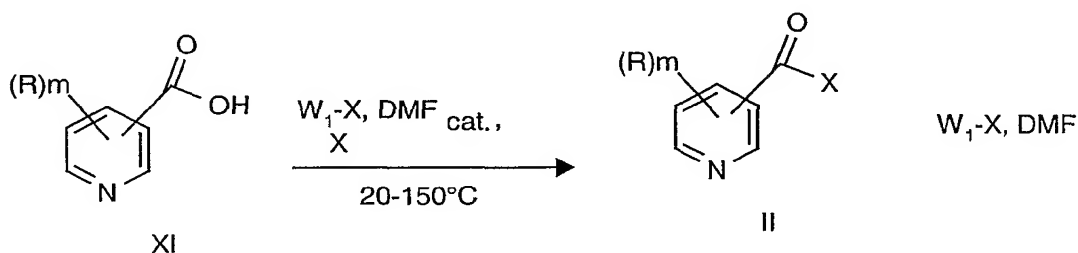


amide, e.g. N,N-dimethylformamide (DMF), a sulfoxide, e.g. dimethyl sulfoxide (DMSO), or a nitrile, e.g. acetonitrile. The ketene thioacetal of formula XIV formed is cyclised using hydroxylamine hydrochloride in the presence of a base, for example sodium acetate, in a solvent, for example an alcohol, e.g. ethanol, or an ether, e.g. tetrahydrofuran, to form the compound of formula Ie wherein Z is S-. The cyclisation reaction is carried out at temperatures of from 0°C to 100°C. The compound of formula Ie (Z=S) may optionally be oxidised in a manner analogous to standard procedures, for example using peracids, e.g. meta-chloroperbenzoic acid (m-CPBA) or peracetic acid, to form the corresponding sulfones and sulfoxides of formula Ie (Z = SO- or SO₂-), wherein the degree of oxidation at the sulfur atom (Z = SO- or SO₂-) can be controlled by the amount of oxidising agent.

Oxidation to the compound of formula Ie ($Z = \text{SO}-$ or SO_2-) is carried out as described, for example, in H. O. House, "Modern Synthetic Reactions" W. A. Benjamin, Inc., Menlo Park, California, 1972, pages 334-335 and 353-354.

The activated carboxylic acid derivatives of formula II in Reaction Scheme 1 (route a), wherein X is a leaving group, for example halogen, e.g. bromine, iodine or especially chlorine, can be prepared in accordance with known standard procedures, for example as described in C. Ferri "Reaktionen der organischen Synthese", Georg Thieme Verlag, Stuttgart, 1978, page 461 ff and as shown in the following Reaction Scheme 3.

Reaction Scheme 3



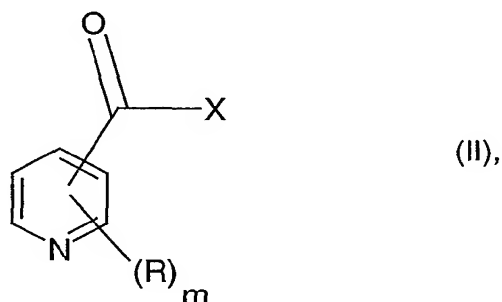
According to Reaction Scheme 3, preparation of the compounds of formula II (X = leaving group) or II (X = halogen) is carried out, for example, by using a halogenating agent, for example a thionyl halide, e.g. thionyl chloride or bromide; a phosphorus halide or phosphorus oxyhalide, e.g. phosphorus pentachloride or phosphorus oxychloride or phosphorus pentabromide or phosphoryl bromide; or an oxalyl halide, e.g. oxalyl chloride, or by using a reagent for the formation of an activated ester for example N,N'-dicyclohexylcarbodiimide (DCC) or N-ethyl-N'-(3-dimethylaminopropyl)carbodiimide (EDC) of formula X. In the compound of formula X, as a halogenating agent, X, for example, is a leaving group, for example halogen, e.g. fluorine, bromine or iodine and especially chlorine, and W_1 is, for example, PCl_2 , SOCl , SOBr or ClCOCO .

The procedure is optionally carried out in an inert, organic solvent, for example in an aliphatic, halogenated aliphatic, aromatic or halogenated aromatic hydrocarbon, e.g. n-hexane, benzene, toluene, xylenes, dichloromethane, 1,2-dichloroethane or chlorobenzene, at reaction temperatures in the range from -20°C to the reflux temperature of the reaction mixture, preferably at from 40 to 150°C , and in the presence of a catalytic amount of N,N-

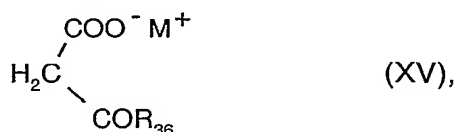
dimethylformamide. Such reactions are generally known and described in the literature in a number of variants with respect to the leaving group X.

The compounds of formulae III, IV, V and VI are known and can be prepared in an analogous manner to that described, for example, in WO 92/07837, DE 3 818 958, EP 338 992 and DE 3 902 818.

The compounds of formula XII in Reaction Scheme 2 can be obtained by standard procedures, for example from the corresponding compounds of formula II



wherein R and m are as defined for formula I and X is a leaving group, for example halogen, for example *via* Claisen condensation, or from the compounds of formula II by reaction with a ketocarboxylic acid salt of formula XV



wherein R₃₆ is as defined for formula I and M⁺ is an alkali metal ion (cf., for example, WO 96/26192).

The compounds of formulae II and XI are known and can be prepared in an analogous manner to that described, for example, in WO 97/46530, Heterocycles, 48, 779 (1998), Heterocycles, 46, 129 (1997) or Tetrahedron Letters, 1749 (1998).

For the preparation of all further compounds of formula I functionalised according to the definition of (R)_m, a large number of known standard procedures, for example alkylation, halogenation, acylation, amidation, oximation, oxidation and reduction, are available, the choice of a suitable preparation procedure being governed by the properties (reactivities) of

the substituents in the respective intermediates. Examples of such reactions are given in WO 97/46353.

All further compounds falling within the scope of formula I can be prepared by simple means, taking into account the chemical properties of the pyridyl and Q moieties.

The end products of formula I can be isolated in customary manner by concentration or evaporation of the solvent and can be purified by recrystallisation or trituration of the solid residue in solvents in which they are not readily soluble, such as ethers, aromatic hydrocarbons or chlorinated hydrocarbons, by distillation or by means of column chromatography and a suitable eluant.

Furthermore, the person skilled in the art will be familiar with the sequence in which certain reactions should advantageously be performed in order to avoid possible subsidiary reactions.

Where synthesis is not directed at the isolation of pure isomers, the product may be in the form of a mixture of two or more isomers. The isomers can be separated according to methods known *per se*.

Preparation Examples:

Example P1: Preparation of 4-hydroxy-3-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-bicyclo[3.2.1]oct-3-en-2-one:

6.68 g (0.0305 mol) of 2-methyl-6-trifluoromethyl-nicotinic acid methyl ester (prepared in the manner described in Heterocycles, 46, 129 (1997)) are dissolved in 250 ml of methanol/-water (3:1 mixture) and 1.92 g (0.046 mol) of lithium hydroxide hydrate are added in portions at 22°C. After 4 hours at 22°C, the reaction mixture is added to ethyl acetate and 2N hydrochloric acid; the organic phase is washed three times with water, dried with sodium sulfate and concentrated by evaporation, and the residue is triturated with a small amount of hexane. After filtering, 5.69 g (90 % of theory) of the expected 2-methyl-6-trifluoromethyl-nicotinic acid having a melting point of 147-149°C are obtained.

The 2-methyl-6-trifluoromethyl-nicotinic acid (2.0 g, 0.0098 mol) obtained is dissolved in 20 ml of oxalyl chloride. Three drops of dimethylformamide are added and the mixture is refluxed for 1 hour. The mixture is then concentrated using a rotary evaporator and the residue (2-methyl-6-trifluoromethyl-nicotinoyl chloride) is taken up in 30 ml of methylene

chloride. At 0°C, 2.7 ml (0.0196 mol) of triethylamine and 0.12 g (0.00098 mol) of dimethylaminopyridine are added, and then 1.49 g (0.0108 mol) of bicyclo[3.2.1]oct-2,4-dione, dissolved in 20 ml of methylene chloride, are added dropwise. After 3 hours at 22°C, the reaction mixture is extracted by shaking with 2N hydrochloric acid. The separated methylene chloride phase is washed with water and then extracted by shaking with 10 % aqueous sodium bicarbonate solution, dried over sodium sulfate and concentrated by evaporation. 3.18 g (100 % of theory) of 2-methyl-6-trifluoromethyl-nicotinic acid 4-oxo-bicyclo[3.2.1]oct-2-en-2-yl ester are obtained in the form of an oil, which can be used further without purification. 3.02 g (0.0093 mol) of methyl-6-trifluoromethyl-nicotinic acid 4-oxo-bicyclo[3.2.1]oct-2-en-2-yl ester and 1.9 ml (0.0136 mol) of triethylamine are dissolved in 45 ml of acetonitrile. At 22°C, 0.01 ml of acetone cyanohydrin is added. After 18 hours at 22°C, the reaction mixture is poured onto a mixture of water and 2N hydrochloric acid and extracted by shaking with ethyl acetate. The ethyl acetate phase is washed with water and then with brine, dried over sodium sulfate and concentrated by evaporation, and the residue is dissolved in a small amount of warm acetone. On being left to stand, the product crystallises out. After filtering, 0.99 g (33 % of theory) of the expected 4-hydroxy-3-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-bicyclo[3.2.1]oct-3-en-2-one is obtained in the form of white crystals (m.p. 75-77°C).

Example P2: (5-Cyclopropyl-3-methylsulfanyl-isoxazol-4-yl)-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-methanone:

14.8 g (0.080 mol) of 3-cyclopropyl-3-oxo-propionic acid tert-butyl ester are dissolved in 25 ml of MeOH and 1.93 g (0.080 mol) of magnesium are added. 7 ml of carbon tetrachloride are added dropwise while cooling in an ice bath and the reaction mixture is stirred at 22°C for 1 hour to complete the reaction. After concentrating by evaporation, the residue is suspended in 100 ml of acetonitrile and, at 22°C, 16.31 g (0.073 mol) of 2-methyl-6-trifluoromethyl-nicotinoyl chloride (prepared in the manner described in Example P1), dissolved in 50 ml of acetonitrile, are added dropwise. After 6 hours, the reaction mixture is taken up in ethyl acetate and washed with saturated sodium bicarbonate solution. The separated ethyl acetate phase is washed with water, dried over sodium sulfate and concentrated by evaporation. The residue is dissolved in 160 ml of methylene chloride and 10 ml of trifluoroacetic acid are added dropwise at 22°C. After 18 hours, the reaction mixture is poured into water and extracted with methylene chloride. The methylene chloride phase is washed with water and then with brine, dried over sodium sulfate and concentrated by

evaporation. 17.3 g (88 % of theory) of 1-cyclopropyl-3-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-propane-1,3-dione are obtained in the form of an oil, which can be used further without purification.

The 1-cyclopropyl-3-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-propane-1,3-dione (15.0 g, 0.055 mol) obtained is dissolved in 150 ml of dimethylformamide and 50 g of potassium fluoride on an aluminium oxide support (Alox) (0.0055 mol/g, 0.276 mol) are added in portions at 0°C. After 5 minutes, 6.7 g (0.088 mol) of carbon disulfide are added. After 2 hours, 23.6 g (0.166 mol) of methyl iodide are added dropwise and the reaction mixture is heated at 22°C. After 2 hours the Alox is filtered off, the filtrate is poured into water and extracted by shaking with ethyl acetate. The ethyl acetate phase is washed with water and then with brine, dried over sodium sulfate and concentrated by evaporation. The residue is chromatographed on silica gel (eluant: ethyl acetate/hexane 15/1). 12.0 g (60 % of theory) of 2-(bis-methylsulfanyl-methylene)-1-cyclopropyl-3-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-propane-1,3-dione are obtained in the form of a solid substance.

12.0 g (0.033 mol) of the product obtained are suspended in 120 ml of ethanol together with 5.4 g (0.066 mol) of anhydrous sodium acetate. 4.6 g (0.066 mol) of hydroxylamine hydrochloride are added and the batch is reacted at 22°C for 5 hours. A further 2.7 g of anhydrous sodium acetate and 2.3 g of hydroxylamine hydrochloride are then added. After 18 hours, the reaction mixture is diluted with water and extracted with ethyl acetate. The ethyl acetate phase is washed with water and then with brine, dried over sodium sulfate and concentrated by evaporation. On triturating with a small amount of ethyl acetate, 9.0 g (79.5 %) of the desired product are obtained in the form of white crystals (m.p. 103-104°C).

Example P3: (5-Cyclopropyl-3-methylsulfinyl-isoxazol-4-yl)-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-methanone

1.50 g (0.0043 mol) of (5-cyclopropyl-3-methylsulfanyl-isoxazol-4-yl)-(2-methyl-6-trifluoromethyl-pyridin-3-yl)-methanone are dissolved in 30 ml of acetone/water (2:1 mixture) and 1.02 g (0.0048 mol) of sodium metaperiodate are added in portions at 22°C. After 5 hours, the reaction mixture is concentrated by evaporation using a rotary evaporator. The residue is taken up in water and ethyl acetate. The ethyl acetate phase is dried over sodium sulfate and concentrated by evaporation. The residue is chromatographed on silica gel (eluant: ethyl acetate/hexane 3/1). 0.8 g (51 %) of the desired product is obtained in the form of white crystals (m.p. 96-97°C).

Example P4: Preparation of 3-hydroxy-4,4-dimethyl-2-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-cyclohex-2-enone (A2-B24):

6.68 g (0.0305 mol) of 2-methyl-6-trifluoromethyl-nicotinic acid methyl ester (prepared in the manner described in Heterocycles, 46, 129 (1997)) are dissolved in 250 ml of methanol/-water (3:1 mixture) and 1.92 g (0.046 mol) of lithium hydroxide hydrate are added in portions at a temperature of 22°C. After 4 hours at 22°C, the reaction mixture is added to ethyl acetate and 2N hydrochloric acid; the organic phase is washed three times with water, dried over sodium sulfate and concentrated by evaporation, and the residue is triturated with a small amount of hexane. After filtering, 5.69 g (90 % of theory) of the expected 2-methyl-6-trifluoromethyl-nicotinic acid having a melting point of 147-149°C are obtained.

The 2-methyl-6-trifluoromethyl-nicotinic acid (1.026 g, 0.005 mol) obtained is dissolved in 20 ml of oxalyl chloride. Three drops of dimethylformamide are added and the mixture is refluxed for 1 hour. The mixture is then concentrated by evaporation using a rotary evaporator and the residue (2-methyl-6-trifluoromethyl-nicotinoyl chloride) is taken up in 100 ml of methylene chloride. At a temperature of 0°C, 1.6 ml (0.0115 mol) of triethylamine and 0.7 g (0.005 mol) 4,4-dimethyl-cyclohexane-1,3-dione are added. After 2 hours at a temperature of 22°C, the solvent is removed using a vacuum rotary evaporator, the residue that remains is dissolved in 55 ml of acetonitrile and, for rearrangement of the intermediate, 0.15 ml (0.0016 mol) of acetone cyanohydrin and 0.79 ml (0.0057 mol) of triethylamine are added. After stirring for four hours at room temperature, the reaction solution is concentrated by evaporation. The syrup that remains is chromatographed on silica gel. The light-yellow, viscous oil obtained by eluting with a mixture of toluene, ethyl alcohol, dioxane, triethylamine and water (100:40:20:20:5 parts by volume) ($R_f = 0.39$ based on the said mixture as mobile phase) is dissolved in dichloromethane and washed with 75 ml of hydrochloric acid 5 % and 75 ml of water in succession. After drying the organic solution with Na_2SO_4 , concentration by evaporation yields 1.05 g (63 %) of pure title compound.

$^1\text{H NMR}$ (d_6 -DMSO, δ in ppm): 1.342, s, 6H; 2.088, t, J 9Hz, 2H; 2.685, s, 3H; 2.982, t, J 9Hz, 2H; 8.030, d, J 8.1Hz, 1H; 8.094, d, J 8.1Hz, 1H.

Example P5: Preparation of 5-methyl-5-trifluoromethyl-cyclohexane-1,3-dione (Example B1066):

0.64 g of sodium is introduced into 40 ml of ethanol, 3.23 ml of acetic acid methyl ester and 4.9 g of 4,4,4-trifluoro-3-methyl-but-2-enoic acid isopropyl ester are incorporated and the

mixture is heated at boiling temperature for 18 hours. After extraction with dilute hydrochloric acid against ethyl acetate, concentration by evaporation is carried out. The non-purified 2-methyl-4,6-dioxo-2-trifluoromethyl-cyclohexanecarboxylic acid methyl ester that remains behind is esterified in the presence of 9.1 g of sodium hydroxide in a mixture of methanol and water at boiling temperature. The mixture is then acidified with hydrochloric acid and extracted with fresh ethyl acetate. After recrystallisation (ethyl acetate), pure 5-methyl-5-trifluoromethyl-cyclohexane-1,3-dione having a melting point of 150-152°C is obtained.

Example P6: Preparation of 2-hydroxy-1-methoxy-5-methyl-4-oxo-cyclohex-2-enecarboxylic acid methyl ester (B1069):

A 30 % solution of 35.8 g of sodium methanolate is made up in 65 ml of dimethyl sulfoxide and, over a period of 20 minutes, is treated at a temperature of from 30 to 35°C with a mixture of 16.7 g of 3-methyl-3-buten-2-one and 32.4 g of methoxymalonic acid dimethyl ester. The mixture is stirred for 1 hour at a temperature of 35°C, acidified with hydrochloric acid and then extracted several times with dichloromethane. The organic phases are washed with water, dried and concentrated. By crystallising from hot ethyl acetate and hexane, pure 2-hydroxy-1-methoxy-5-methyl-4-oxo-cyclohex-2-enecarboxylic acid methyl ester having a melting point of 117-117.5°C is obtained.

Example P7: Preparation of 2-hydroxy-1-methoxy-5-methyl-3-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-4-oxo-cyclohex-2-ene-carboxylic acid methyl ester (A2-B1069):

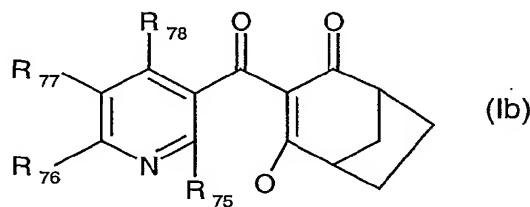
2.23 g of fresh 2-methyl-6-trifluoromethyl-nicotinoyl chloride are added to a mixture of 2.14 g of 2-hydroxy-1-methoxy-5-methyl-4-oxo-cyclohex-2-ene-carboxylic acid methyl ester and 2.02 g of triethylamine in 30 ml of acetonitrile. After about 30 minutes, 0.065 g of potassium cyanide is added and the batch is stirred for 18 hours. The batch is then extracted at pH 2 with water against ethyl acetate, dried over magnesium sulfate and concentrated by evaporation. By filtering over silica gel (mobile phase: ethyl acetate/methanol/triethylamine 85:10:5), pure 2-hydroxy-1-methoxy-5-methyl-3-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-4-oxo-cyclohex-2-enecarboxylic acid methyl ester is obtained in the form of a viscous oil.

Example P8: Preparation of 3-hydroxy-4-methoxy-6-methyl-2-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-cyclohex-2-enone (A2-B1070):

0.586 g of potassium hydroxide is added to 1.4 g of 2-hydroxy-1-methoxy-5-methyl-3-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-4-oxo-cyclohex-2-enecarboxylic acid methyl ester in dioxane/water (5:3) and the batch is stirred for 3 hours. The batch is then acidified (pH 3) and extracted with fresh ethyl acetate. The crude product is purified by chromatography analogously to Example P7. 3-Hydroxy-4-methoxy-6-methyl-2-(2-methyl-6-trifluoromethyl-pyridine-3-carbonyl)-cyclohex-2-enone is obtained in the form of a viscous oil (as a mixture of 3 tautomeric forms, according to $^1\text{H-NMR}$).

The compounds listed in the following Tables can also be prepared in an analogous manner and using methods described in the general Reaction Schemes 1 and 2 and in the references mentioned therein. In the following Tables Ph is the phenyl group and CC is an ethyne group.

Table 1: Compounds of formula Ib:



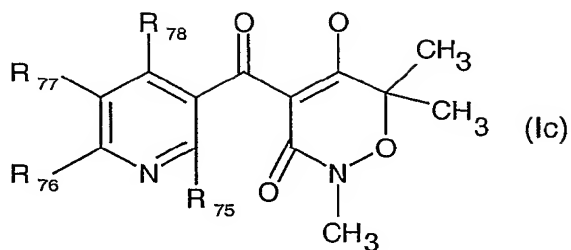
Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p. (°C)
1.001	CH ₃	CF ₃	H	H	75-77
1.002	CH ₃ CH ₂	CF ₃	H	H	
1.003	(CH ₃) ₂ CH	CF ₃	H	H	111-112
1.004	CH ₃ (CH ₂) ₃	CF ₃	H	H	
1.005	Ph	CF ₃	H	H	oil
1.006	CH ₂ Br	CF ₃	H	H	
1.007	CH ₂ OCH ₃	CF ₃	H	H	124-126
1.008	CH ₂ SMe	CF ₃	H	H	oil
1.009	CH ₂ SO ₂ Me	CF ₃	H	H	55-55
1.010	SCH ₃	CF ₃	H	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p. (°C)
1.011	SOCH ₃	CF ₃	H	H	
1.012	SO ₂ CH ₃	CF ₃	H	H	
1.013	SPh	CF ₃	H	H	
1.014	SOPh	CF ₃	H	H	
1.015	SO ₂ Ph	CF ₃	H	H	
1.016	CH ₃	CF ₃ CF ₂	H	H	
1.017	CH ₃ CH ₂	CF ₃ CF ₂	H	H	
1.018	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	
1.019	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	
1.020	Ph	CF ₃ CF ₂	H	H	
1.021	CH ₂ Br	CF ₃ CF ₂	H	H	
1.022	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	
1.023	CH ₂ SMe	CF ₃ CF ₂	H	H	
1.024	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	
1.025	SCH ₃	CF ₃ CF ₂	H	H	
1.026	SOCH ₃	CF ₃ CF ₂	H	H	
1.027	SO ₂ CH ₃	CF ₃ CF ₂	H	H	
1.028	SPh	CF ₃ CF ₂	H	H	
1.029	SOPh	CF ₃ CF ₂	H	H	
1.030	SO ₂ Ph	CF ₃ CF ₂	H	H	
1.031	CH ₃	CHF ₂	H	H	
1.032	CH ₃ CH ₂	CHF ₂	H	H	
1.033	(CH ₃) ₂ CH	CHF ₂	H	H	
1.034	CH ₃ (CH ₂) ₃	CHF ₂	H	H	
1.035	Ph	CHF ₂	H	H	
1.036	CH ₂ Br	CHF ₂	H	H	
1.037	CH ₂ OCH ₃	CHF ₂	H	H	
1.038	CH ₂ SMe	CHF ₂	H	H	
1.039	CH ₂ SO ₂ Me	CHF ₂	H	H	
1.040	SCH ₃	CHF ₂	H	H	
1.041	SOCH ₃	CHF ₂	H	H	
1.042	SO ₂ CH ₃	CHF ₂	H	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p. (°C)
1.043	SPh	CHF ₂	H	H	
1.044	SOPh	CHF ₂	H	H	
1.045	SO ₂ Ph	CHF ₂	H	H	
1.046	CH ₃	CF ₃	CH ₃	H	
1.047	CH ₃ CH ₂	CF ₃	CH ₃	H	
1.048	(CH ₃) ₂ CH	CF ₃	CH ₃	H	
1.049	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	
1.050	Ph	CF ₃	CH ₃	H	
1.051	CH ₂ Br	CF ₃	CH ₃	H	
1.052	CH ₂ OCH ₃	CF ₃	CH ₃	H	
1.053	CH ₂ SMe	CF ₃	CH ₃	H	
1.054	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	
1.055	SCH ₃	CF ₃	CH ₃	H	
1.056	SOCH ₃	CF ₃	CH ₃	H	
1.057	SO ₂ CH ₃	CF ₃	CH ₃	H	
1.058	SPh	CF ₃	CH ₃	H	
1.059	SOPh	CF ₃	CH ₃	H	
1.060	SO ₂ Ph	CF ₃	CH ₃	H	
1.061	CH ₃	CF ₃ CF ₂	CH ₃	H	
1.062	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	
1.063	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	
1.064	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	
1.065	Ph	CF ₃ CF ₂	CH ₃	H	
1.066	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	
1.067	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	
1.068	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	
1.069	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	
1.070	SCH ₃	CF ₃ CF ₂	CH ₃	H	
1.071	SOCH ₃	CF ₃ CF ₂	CH ₃	H	
1.072	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	
1.073	SPh	CF ₃ CF ₂	CH ₃	H	
1.074	SOPh	CF ₃ CF ₂	CH ₃	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p. (°C)
1.075	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	
1.076	CH ₃	CHF ₂	CH ₃	H	
1.077	CH ₃ CH ₂	CHF ₂	CH ₃	H	
1.078	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	
1.079	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	
1.080	Ph	CHF ₂	CH ₃	H	
1.081	CH ₂ Br	CHF ₂	CH ₃	H	
1.082	CH ₂ OCH ₃	CHF ₂	CH ₃	H	
1.083	CH ₂ SMe	CHF ₂	CH ₃	H	
1.084	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	
1.085	SCH ₃	CHF ₂	CH ₃	H	
1.086	SOCH ₃	CHF ₂	CH ₃	H	
1.087	SO ₂ CH ₃	CHF ₂	CH ₃	H	
1.088	SPh	CHF ₂	CH ₃	H	
1.089	SOPh	CHF ₂	CH ₃	H	
1.090	SO ₂ Ph	CHF ₂	CH ₃	H	
1.091	CH ₃	CF ₃	H	CH ₃	92-94
1.092	CH ₃ CH ₂	CF ₃	H	CH ₃	
1.093	(CH ₃) ₂ CH	CF ₃	H	CH ₃	
1.094	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	
1.095	Ph	CF ₃	H	CH ₃	
1.096	CH ₂ Br	CF ₃	H	CH ₃	
1.097	CH ₂ OCH ₃	CF ₃	H	CH ₃	
1.098	CH ₂ SMe	CF ₃	H	CH ₃	
1.099	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	
1.100	SCH ₃	CF ₃	H	CH ₃	
1.101	SOCH ₃	CF ₃	H	CH ₃	
1.102	SO ₂ CH ₃	CF ₃	H	CH ₃	
1.103	SPh	CF ₃	H	CH ₃	
1.104	SOPh	CF ₃	H	CH ₃	
1.105	SO ₂ Ph	CF ₃	H	CH ₃	

Table 2: Compounds of formula Ic:



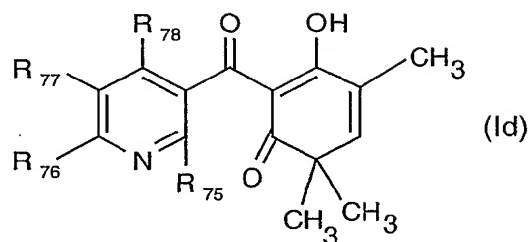
Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
2.001	CH ₃	CF ₃	H	H	107-109
2.002	CH ₃ CH ₂	CF ₃	H	H	oil
2.003	(CH ₃) ₂ CH	CF ₃	H	H	oil
2.004	CH ₃ (CH ₂) ₃	CF ₃	H	H	
2.005	Ph	CF ₃	H	H	oil
2.006	CH ₂ Br	CF ₃	H	H	
2.007	CH ₂ OCH ₃	CF ₃	H	H	
2.008	CH ₂ SMe	CF ₃	H	H	
2.009	CH ₂ SO ₂ Me	CF ₃	H	H	
2.010	SCH ₃	CF ₃	H	H	
2.011	SOCH ₃	CF ₃	H	H	
2.012	SO ₂ CH ₃	CF ₃	H	H	
2.013	SPh	CF ₃	H	H	
2.014	SOPh	CF ₃	H	H	
2.015	SO ₂ Ph	CF ₃	H	H	
2.016	CH ₃	CF ₃ CF ₂	H	H	
2.017	CH ₃ CH ₂	CF ₃ CF ₂	H	H	
2.018	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	
2.019	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	
2.020	Ph	CF ₃ CF ₂	H	H	
2.021	CH ₂ Br	CF ₃ CF ₂	H	H	
2.022	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
2.023	CH ₂ SMe	CF ₃ CF ₂	H	H	
2.024	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	
2.025	SCH ₃	CF ₃ CF ₂	H	H	
2.026	SOCH ₃	CF ₃ CF ₂	H	H	
2.027	SO ₂ CH ₃	CF ₃ CF ₂	H	H	
2.028	SPh	CF ₃ CF ₂	H	H	
2.029	SOPh	CF ₃ CF ₂	H	H	
2.030	SO ₂ Ph	CF ₃ CF ₂	H	H	
2.031	CH ₃	CHF ₂	H	H	
2.032	CH ₃ CH ₂	CHF ₂	H	H	
2.033	(CH ₃) ₂ CH	CHF ₂	H	H	
2.034	CH ₃ (CH ₂) ₃	CHF ₂	H	H	
2.035	Ph	CHF ₂	H	H	
2.036	CH ₂ Br	CHF ₂	H	H	
2.037	CH ₂ OCH ₃	CHF ₂	H	H	
2.038	CH ₂ SMe	CHF ₂	H	H	
2.039	CH ₂ SO ₂ Me	CHF ₂	H	H	
2.040	SCH ₃	CHF ₂	H	H	
2.041	SOCH ₃	CHF ₂	H	H	
2.042	SO ₂ CH ₃	CHF ₂	H	H	
2.043	SPh	CHF ₂	H	H	
2.044	SOPh	CHF ₂	H	H	
2.045	SO ₂ Ph	CHF ₂	H	H	
2.046	CH ₃	CF ₃	CH ₃	H	
2.047	CH ₃ CH ₂	CF ₃	CH ₃	H	
2.048	(CH ₃) ₂ CH	CF ₃	CH ₃	H	
2.049	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	
2.050	Ph	CF ₃	CH ₃	H	
2.051	CH ₂ Br	CF ₃	CH ₃	H	
2.052	CH ₂ OCH ₃	CF ₃	CH ₃	H	
2.053	CH ₂ SMe	CF ₃	CH ₃	H	
2.054	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
2.055	SCH ₃	CF ₃	CH ₃	H	
2.056	SOCH ₃	CF ₃	CH ₃	H	
2.057	SO ₂ CH ₃	CF ₃	CH ₃	H	
2.058	SPh	CF ₃	CH ₃	H	
2.059	SOPh	CF ₃	CH ₃	H	
2.060	SO ₂ Ph	CF ₃	CH ₃	H	
2.061	CH ₃	CF ₃ CF ₂	CH ₃	H	
2.062	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	
2.063	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	
2.064	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	
2.065	Ph	CF ₃ CF ₂	CH ₃	H	
2.066	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	
2.067	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	
2.068	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	
2.069	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	
2.070	SCH ₃	CF ₃ CF ₂	CH ₃	H	
2.071	SOCH ₃	CF ₃ CF ₂	CH ₃	H	
2.072	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	
2.073	SPh	CF ₃ CF ₂	CH ₃	H	
2.074	SOPh	CF ₃ CF ₂	CH ₃	H	
2.075	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	
2.076	CH ₃	CHF ₂	CH ₃	H	
2.077	CH ₃ CH ₂	CHF ₂	CH ₃	H	
2.078	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	
2.079	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	
2.080	Ph	CHF ₂	CH ₃	H	
2.081	CH ₂ Br	CHF ₂	CH ₃	H	
2.082	CH ₂ OCH ₃	CHF ₂	CH ₃	H	
2.083	CH ₂ SMe	CHF ₂	CH ₃	H	
2.084	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	
2.085	SCH ₃	CHF ₂	CH ₃	H	
2.086	SOCH ₃	CHF ₂	CH ₃	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
2.087	SO ₂ CH ₃	CHF ₂	CH ₃	H	
2.088	SPh	CHF ₂	CH ₃	H	
2.089	SOPh	CHF ₂	CH ₃	H	
2.090	SO ₂ Ph	CHF ₂	CH ₃	H	
2.091	CH ₃	CF ₃	H	CH ₃	
2.092	CH ₃ CH ₂	CF ₃	H	CH ₃	
2.093	(CH ₃) ₂ CH	CF ₃	H	CH ₃	
2.094	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	
2.095	Ph	CF ₃	H	CH ₃	
2.096	CH ₂ Br	CF ₃	H	CH ₃	
2.097	CH ₂ OCH ₃	CF ₃	H	CH ₃	
2.098	CH ₂ SMe	CF ₃	H	CH ₃	
2.099	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	
2.100	SCH ₃	CF ₃	H	CH ₃	
2.101	SOCH ₃	CF ₃	H	CH ₃	
2.102	SO ₂ CH ₃	CF ₃	H	CH ₃	
2.103	SPh	CF ₃	H	CH ₃	
2.104	SOPh	CF ₃	H	CH ₃	
2.105	SO ₂ Ph	CF ₃	H	CH ₃	

Table 3: Compounds of formula Id:



Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
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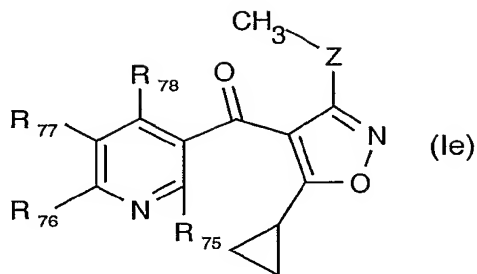
Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
3.001	CH ₃	CF ₃	H	H	
3.002	CH ₃ CH ₂	CF ₃	H	H	
3.003	(CH ₃) ₂ CH	CF ₃	H	H	
3.004	CH ₃ (CH ₂) ₃	CF ₃	H	H	
3.005	Ph	CF ₃	H	H	
3.006	CH ₂ Br	CF ₃	H	H	
3.007	CH ₂ OCH ₃	CF ₃	H	H	
3.008	CH ₂ SMe	CF ₃	H	H	
3.009	CH ₂ SO ₂ Me	CF ₃	H	H	
3.010	SCH ₃	CF ₃	H	H	
3.011	SOCH ₃	CF ₃	H	H	
3.012	SO ₂ CH ₃	CF ₃	H	H	
3.013	SPh	CF ₃	H	H	
3.014	SOPh	CF ₃	H	H	
3.015	SO ₂ Ph	CF ₃	H	H	
3.016	CH ₃	CF ₃ CF ₂	H	H	
3.017	CH ₃ CH ₂	CF ₃ CF ₂	H	H	
3.018	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	
3.019	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	
3.020	Ph	CF ₃ CF ₂	H	H	
3.021	CH ₂ Br	CF ₃ CF ₂	H	H	
3.022	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	
3.023	CH ₂ SMe	CF ₃ CF ₂	H	H	
3.024	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	
3.025	SCH ₃	CF ₃ CF ₂	H	H	
3.026	SOCH ₃	CF ₃ CF ₂	H	H	
3.027	SO ₂ CH ₃	CF ₃ CF ₂	H	H	
3.028	SPh	CF ₃ CF ₂	H	H	
3.029	SOPh	CF ₃ CF ₂	H	H	
3.030	SO ₂ Ph	CF ₃ CF ₂	H	H	
3.031	CH ₃	CHF ₂	H	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
3.032	CH ₃ CH ₂	CHF ₂	H	H	
3.033	(CH ₃) ₂ CH	CHF ₂	H	H	
3.034	CH ₃ (CH ₂) ₃	CHF ₂	H	H	
3.035	Ph	CHF ₂	H	H	
3.036	CH ₂ Br	CHF ₂	H	H	
3.037	CH ₂ OCH ₃	CHF ₂	H	H	
3.038	CH ₂ SMe	CHF ₂	H	H	
3.039	CH ₂ SO ₂ Me	CHF ₂	H	H	
3.040	SCH ₃	CHF ₂	H	H	
3.041	SOCH ₃	CHF ₂	H	H	
3.042	SO ₂ CH ₃	CHF ₂	H	H	
3.043	SPh	CHF ₂	H	H	
3.044	SOPh	CHF ₂	H	H	
3.045	SO ₂ Ph	CHF ₂	H	H	
3.046	CH ₃	CF ₃	CH ₃	H	
3.047	CH ₃ CH ₂	CF ₃	CH ₃	H	
3.048	(CH ₃) ₂ CH	CF ₃	CH ₃	H	
3.049	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	
3.050	Ph	CF ₃	CH ₃	H	
3.051	CH ₂ Br	CF ₃	CH ₃	H	
3.052	CH ₂ OCH ₃	CF ₃	CH ₃	H	
3.053	CH ₂ SMe	CF ₃	CH ₃	H	
3.054	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	
3.055	SCH ₃	CF ₃	CH ₃	H	
3.056	SOCH ₃	CF ₃	CH ₃	H	
3.057	SO ₂ CH ₃	CF ₃	CH ₃	H	
3.058	SPh	CF ₃	CH ₃	H	
3.059	SOPh	CF ₃	CH ₃	H	
3.060	SO ₂ Ph	CF ₃	CH ₃	H	
3.061	CH ₃	CF ₃ CF ₂	CH ₃	H	
3.062	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	
3.063	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
3.064	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	
3.065	Ph	CF ₃ CF ₂	CH ₃	H	
3.066	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	
3.067	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	
3.068	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	
3.069	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	
3.070	SCH ₃	CF ₃ CF ₂	CH ₃	H	
3.071	SOCH ₃	CF ₃ CF ₂	CH ₃	H	
3.072	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	
3.073	SPh	CF ₃ CF ₂	CH ₃	H	
3.074	SOPh	CF ₃ CF ₂	CH ₃	H	
3.075	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	
3.076	CH ₃	CHF ₂	CH ₃	H	
3.077	CH ₃ CH ₂	CHF ₂	CH ₃	H	
3.078	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	
3.079	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	
3.080	Ph	CHF ₂	CH ₃	H	
3.081	CH ₂ Br	CHF ₂	CH ₃	H	
3.082	CH ₂ OCH ₃	CHF ₂	CH ₃	H	
3.083	CH ₂ SMe	CHF ₂	CH ₃	H	
3.084	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	
3.085	SCH ₃	CHF ₂	CH ₃	H	
3.086	SOCH ₃	CHF ₂	CH ₃	H	
3.087	SO ₂ CH ₃	CHF ₂	CH ₃	H	
3.088	SPh	CHF ₂	CH ₃	H	
3.089	SOPh	CHF ₂	CH ₃	H	
3.090	SO ₂ Ph	CHF ₂	CH ₃	H	
3.091	CH ₃	CF ₃	H	CH ₃	
3.092	CH ₃ CH ₂	CF ₃	H	CH ₃	
3.093	(CH ₃) ₂ CH	CF ₃	H	CH ₃	
3.094	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	
3.095	Ph	CF ₃	H	CH ₃	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	m.p.(°C)
3.096	CH ₂ Br	CF ₃	H	CH ₃	
3.097	CH ₂ OCH ₃	CF ₃	H	CH ₃	
3.098	CH ₂ SMe	CF ₃	H	CH ₃	
3.099	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	
3.100	SCH ₃	CF ₃	H	CH ₃	
3.101	SOCH ₃	CF ₃	H	CH ₃	
3.102	SO ₂ CH ₃	CF ₃	H	CH ₃	
3.103	SPh	CF ₃	H	CH ₃	
3.104	SOPh	CF ₃	H	CH ₃	
3.105	SO ₂ Ph	CF ₃	H	CH ₃	

Table 4: Compounds of formula Ie:



Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.001	CH ₃	CF ₃	H	H	S	103-104
4.002	CH ₃ CH ₂	CF ₃	H	H	S	
4.003	(CH ₃) ₂ CH	CF ₃	H	H	S	
4.004	CH ₃ (CH ₂) ₃	CF ₃	H	H	S	
4.005	Ph	CF ₃	H	H	S	
4.006	CH ₂ Br	CF ₃	H	H	S	
4.007	CH ₂ OCH ₃	CF ₃	H	H	S	
4.008	CH ₂ SMe	CF ₃	H	H	S	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.009	CH ₂ SO ₂ Me	CF ₃	H	H	S	
4.010	SCH ₃	CF ₃	H	H	S	
4.011	SOCH ₃	CF ₃	H	H	S	
4.012	SO ₂ CH ₃	CF ₃	H	H	S	
4.013	SPh	CF ₃	H	H	S	
4.014	SOPh	CF ₃	H	H	S	
4.015	SO ₂ Ph	CF ₃	H	H	S	
4.016	CH ₃	CF ₃ CF ₂	H	H	S	
4.017	CH ₃ CH ₂	CF ₃ CF ₂	H	H	S	
4.018	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	S	
4.019	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	S	
4.020	Ph	CF ₃ CF ₂	H	H	S	
4.021	CH ₂ Br	CF ₃ CF ₂	H	H	S	
4.022	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	S	
4.023	CH ₂ SMe	CF ₃ CF ₂	H	H	S	
4.024	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	S	
4.025	SCH ₃	CF ₃ CF ₂	H	H	S	
4.026	SOCH ₃	CF ₃ CF ₂	H	H	S	
4.027	SO ₂ CH ₃	CF ₃ CF ₂	H	H	S	
4.028	SPh	CF ₃ CF ₂	H	H	S	
4.029	SOPh	CF ₃ CF ₂	H	H	S	
4.030	SO ₂ Ph	CF ₃ CF ₂	H	H	S	
4.031	CH ₃	CHF ₂	H	H	S	
4.032	CH ₃ CH ₂	CHF ₂	H	H	S	
4.033	(CH ₃) ₂ CH	CHF ₂	H	H	S	
4.034	CH ₃ (CH ₂) ₃	CHF ₂	H	H	S	
4.035	Ph	CHF ₂	H	H	S	
4.036	CH ₂ Br	CHF ₂	H	H	S	
4.037	CH ₂ OCH ₃	CHF ₂	H	H	S	
4.038	CH ₂ SMe	CHF ₂	H	H	S	
4.039	CH ₂ SO ₂ Me	CHF ₂	H	H	S	
4.040	SCH ₃	CHF ₂	H	H	S	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.041	SOCH ₃	CHF ₂	H	H	S	
4.042	SO ₂ CH ₃	CHF ₂	H	H	S	
4.043	SPh	CHF ₂	H	H	S	
4.044	SOPh	CHF ₂	H	H	S	
4.045	SO ₂ Ph	CHF ₂	H	H	S	
4.046	CH ₃	CF ₃	CH ₃	H	S	
4.047	CH ₃ CH ₂	CF ₃	CH ₃	H	S	
4.048	(CH ₃) ₂ CH	CF ₃	CH ₃	H	S	
4.049	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	S	
4.050	Ph	CF ₃	CH ₃	H	S	
4.051	CH ₂ Br	CF ₃	CH ₃	H	S	
4.052	CH ₂ OCH ₃	CF ₃	CH ₃	H	S	
4.053	CH ₂ SMe	CF ₃	CH ₃	H	S	
4.054	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	S	
4.055	SCH ₃	CF ₃	CH ₃	H	S	
4.056	SOCH ₃	CF ₃	CH ₃	H	S	
4.057	SO ₂ CH ₃	CF ₃	CH ₃	H	S	
4.058	SPh	CF ₃	CH ₃	H	S	
4.059	SOPh	CF ₃	CH ₃	H	S	
4.060	SO ₂ Ph	CF ₃	CH ₃	H	S	
4.061	CH ₃	CF ₃ CF ₂	CH ₃	H	S	
4.062	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	S	
4.063	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	S	
4.064	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	S	
4.065	Ph	CF ₃ CF ₂	CH ₃	H	S	
4.066	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	S	
4.067	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	S	
4.068	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	S	
4.069	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	S	
4.070	SCH ₃	CF ₃ CF ₂	CH ₃	H	S	
4.071	SOCH ₃	CF ₃ CF ₂	CH ₃	H	S	
4.072	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	S	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.073	SPh	CF ₃ CF ₂	CH ₃	H	S	
4.074	SOPh	CF ₃ CF ₂	CH ₃	H	S	
4.075	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	S	
4.076	CH ₃	CHF ₂	CH ₃	H	S	
4.077	CH ₃ CH ₂	CHF ₂	CH ₃	H	S	
4.078	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	S	
4.079	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	S	
4.080	Ph	CHF ₂	CH ₃	H	S	
4.081	CH ₂ Br	CHF ₂	CH ₃	H	S	
4.082	CH ₂ OCH ₃	CHF ₂	CH ₃	H	S	
4.083	CH ₂ SMe	CHF ₂	CH ₃	H	S	
4.084	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	S	
4.085	SCH ₃	CHF ₂	CH ₃	H	S	
4.086	SOCH ₃	CHF ₂	CH ₃	H	S	
4.087	SO ₂ CH ₃	CHF ₂	CH ₃	H	S	
4.088	SPh	CHF ₂	CH ₃	H	S	
4.089	SOPh	CHF ₂	CH ₃	H	S	
4.090	SO ₂ Ph	CHF ₂	CH ₃	H	S	
4.091	CH ₃	CF ₃	H	CH ₃	S	
4.092	CH ₃ CH ₂	CF ₃	H	CH ₃	S	
4.093	(CH ₃) ₂ CH	CF ₃	H	CH ₃	S	
4.094	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	S	
4.095	Ph	CF ₃	H	CH ₃	S	
4.096	CH ₂ Br	CF ₃	H	CH ₃	S	
4.097	CH ₂ OCH ₃	CF ₃	H	CH ₃	S	
4.098	CH ₂ SMe	CF ₃	H	CH ₃	S	
4.099	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	S	
4.100	SCH ₃	CF ₃	H	CH ₃	S	
4.101	SOCH ₃	CF ₃	H	CH ₃	S	
4.102	SO ₂ CH ₃	CF ₃	H	CH ₃	S	
4.103	SPh	CF ₃	H	CH ₃	S	
4.104	SOPh	CF ₃	H	CH ₃	S	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.105	SO ₂ Ph	CF ₃	H	CH ₃	S	96-97
4.106	CH ₃	CF ₃	H	H	SO	
4.107	CH ₃ CH ₂	CF ₃	H	H	SO	
4.108	(CH ₃) ₂ CH	CF ₃	H	H	SO	
4.109	CH ₃ (CH ₂) ₃	CF ₃	H	H	SO	
4.110	Ph	CF ₃	H	H	SO	
4.111	CH ₂ Br	CF ₃	H	H	SO	
4.112	CH ₂ OCH ₃	CF ₃	H	H	SO	
4.113	CH ₂ SMe	CF ₃	H	H	SO	
4.114	CH ₂ SO ₂ Me	CF ₃	H	H	SO	
4.115	SCH ₃	CF ₃	H	H	SO	
4.116	SOCH ₃	CF ₃	H	H	SO	
4.117	SO ₂ CH ₃	CF ₃	H	H	SO	
4.118	SPh	CF ₃	H	H	SO	
4.119	SOPh	CF ₃	H	H	SO	
4.120	SO ₂ Ph	CF ₃	H	H	SO	
4.121	CH ₃	CF ₃ CF ₂	H	H	SO	
4.122	CH ₃ CH ₂	CF ₃ CF ₂	H	H	SO	
4.123	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	SO	
4.124	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	SO	
4.125	Ph	CF ₃ CF ₂	H	H	SO	
4.126	CH ₂ Br	CF ₃ CF ₂	H	H	SO	
4.127	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	SO	
4.128	CH ₂ SMe	CF ₃ CF ₂	H	H	SO	
4.129	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	SO	
4.130	SCH ₃	CF ₃ CF ₂	H	H	SO	
4.131	SOCH ₃	CF ₃ CF ₂	H	H	SO	
4.132	SO ₂ CH ₃	CF ₃ CF ₂	H	H	SO	
4.133	SPh	CF ₃ CF ₂	H	H	SO	
4.134	SOPh	CF ₃ CF ₂	H	H	SO	
4.135	SO ₂ Ph	CF ₃ CF ₂	H	H	SO	
4.136	CH ₃	CHF ₂	H	H	SO	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.137	CH ₃ CH ₂	CHF ₂	H	H	SO	
4.138	(CH ₃) ₂ CH	CHF ₂	H	H	SO	
4.139	CH ₃ (CH ₂) ₃	CHF ₂	H	H	SO	
4.140	Ph	CHF ₂	H	H	SO	
4.141	CH ₂ Br	CHF ₂	H	H	SO	
4.142	CH ₂ OCH ₃	CHF ₂	H	H	SO	
4.143	CH ₂ SMe	CHF ₂	H	H	SO	
4.144	CH ₂ SO ₂ Me	CHF ₂	H	H	SO	
4.145	SCH ₃	CHF ₂	H	H	SO	
4.146	SOCH ₃	CHF ₂	H	H	SO	
4.147	SO ₂ CH ₃	CHF ₂	H	H	SO	
4.148	SPh	CHF ₂	H	H	SO	
4.149	SOPh	CHF ₂	H	H	SO	
4.150	SO ₂ Ph	CHF ₂	H	H	SO	
4.151	CH ₃	CF ₃	CH ₃	H	SO	
4.152	CH ₃ CH ₂	CF ₃	CH ₃	H	SO	
4.153	(CH ₃) ₂ CH	CF ₃	CH ₃	H	SO	
4.154	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	SO	
4.155	Ph	CF ₃	CH ₃	H	SO	
4.156	CH ₂ Br	CF ₃	CH ₃	H	SO	
4.157	CH ₂ OCH ₃	CF ₃	CH ₃	H	SO	
4.158	CH ₂ SMe	CF ₃	CH ₃	H	SO	
4.159	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	SO	
4.160	SCH ₃	CF ₃	CH ₃	H	SO	
4.161	SOCH ₃	CF ₃	CH ₃	H	SO	
4.162	SO ₂ CH ₃	CF ₃	CH ₃	H	SO	
4.163	SPh	CF ₃	CH ₃	H	SO	
4.164	SOPh	CF ₃	CH ₃	H	SO	
4.165	SO ₂ Ph	CF ₃	CH ₃	H	SO	
4.166	CH ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.167	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	SO	
4.168	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	SO	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.169	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.170	Ph	CF ₃ CF ₂	CH ₃	H	SO	
4.171	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	SO	
4.172	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.173	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	SO	
4.174	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	SO	
4.175	SCH ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.176	SOCH ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.177	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	SO	
4.178	SPh	CF ₃ CF ₂	CH ₃	H	SO	
4.179	SOPh	CF ₃ CF ₂	CH ₃	H	SO	
4.180	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	SO	
4.181	CH ₃	CHF ₂	CH ₃	H	SO	
4.182	CH ₃ CH ₂	CHF ₂	CH ₃	H	SO	
4.183	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	SO	
4.184	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	SO	
4.185	Ph	CHF ₂	CH ₃	H	SO	
4.186	CH ₂ Br	CHF ₂	CH ₃	H	SO	
4.187	CH ₂ OCH ₃	CHF ₂	CH ₃	H	SO	
4.188	CH ₂ SMe	CHF ₂	CH ₃	H	SO	
4.189	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	SO	
4.190	SCH ₃	CHF ₂	CH ₃	H	SO	
4.191	SOCH ₃	CHF ₂	CH ₃	H	SO	
4.192	SO ₂ CH ₃	CHF ₂	CH ₃	H	SO	
4.193	SPh	CHF ₂	CH ₃	H	SO	
4.194	SOPh	CHF ₂	CH ₃	H	SO	
4.195	SO ₂ Ph	CHF ₂	CH ₃	H	SO	
4.196	CH ₃	CF ₃	H	CH ₃	SO	
4.197	CH ₃ CH ₂	CF ₃	H	CH ₃	SO	
4.198	(CH ₃) ₂ CH	CF ₃	H	CH ₃	SO	
4.199	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	SO	
4.200	Ph	CF ₃	H	CH ₃	SO	

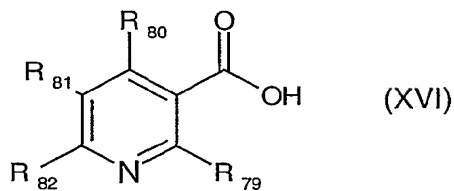
Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.201	CH ₂ Br	CF ₃	H	CH ₃	SO	
4.202	CH ₂ OCH ₃	CF ₃	H	CH ₃	SO	
4.203	CH ₂ SMe	CF ₃	H	CH ₃	SO	
4.204	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	SO	
4.205	SCH ₃	CF ₃	H	CH ₃	SO	
4.206	SOCH ₃	CF ₃	H	CH ₃	SO	
4.207	SO ₂ CH ₃	CF ₃	H	CH ₃	SO	
4.208	SPh	CF ₃	H	CH ₃	SO	
4.209	SOPh	CF ₃	H	CH ₃	SO	
4.210	SO ₂ Ph	CF ₃	H	CH ₃	SO	
4.211	CH ₃	CF ₃	H	H	SO ₂	amorph- ous
4.212	CH ₃ CH ₂	CF ₃	H	H	SO ₂	
4.213	(CH ₃) ₂ CH	CF ₃	H	H	SO ₂	
4.214	CH ₃ (CH ₂) ₃	CF ₃	H	H	SO ₂	
4.215	Ph	CF ₃	H	H	SO ₂	
4.216	CH ₂ Br	CF ₃	H	H	SO ₂	
4.217	CH ₂ OCH ₃	CF ₃	H	H	SO ₂	
4.218	CH ₂ SMe	CF ₃	H	H	SO ₂	
4.219	CH ₂ SO ₂ Me	CF ₃	H	H	SO ₂	
4.220	SCH ₃	CF ₃	H	H	SO ₂	
4.221	SOCH ₃	CF ₃	H	H	SO ₂	
4.222	SO ₂ CH ₃	CF ₃	H	H	SO ₂	
4.223	SPh	CF ₃	H	H	SO ₂	
4.224	SOPh	CF ₃	H	H	SO ₂	
4.225	SO ₂ Ph	CF ₃	H	H	SO ₂	
4.226	CH ₃	CF ₃ CF ₂	H	H	SO ₂	
4.227	CH ₃ CH ₂	CF ₃ CF ₂	H	H	SO ₂	
4.228	(CH ₃) ₂ CH	CF ₃ CF ₂	H	H	SO ₂	
4.229	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	H	H	SO ₂	
4.230	Ph	CF ₃ CF ₂	H	H	SO ₂	
4.231	CH ₂ Br	CF ₃ CF ₂	H	H	SO ₂	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.232	CH ₂ OCH ₃	CF ₃ CF ₂	H	H	SO ₂	
4.233	CH ₂ SMe	CF ₃ CF ₂	H	H	SO ₂	
4.234	CH ₂ SO ₂ Me	CF ₃ CF ₂	H	H	SO ₂	
4.235	SCH ₃	CF ₃ CF ₂	H	H	SO ₂	
4.236	SOCH ₃	CF ₃ CF ₂	H	H	SO ₂	
4.237	SO ₂ CH ₃	CF ₃ CF ₂	H	H	SO ₂	
4.238	SPh	CF ₃ CF ₂	H	H	SO ₂	
4.239	SOPh	CF ₃ CF ₂	H	H	SO ₂	
4.240	SO ₂ Ph	CF ₃ CF ₂	H	H	SO ₂	
4.241	CH ₃	CHF ₂	H	H	SO ₂	
4.242	CH ₃ CH ₂	CHF ₂	H	H	SO ₂	
4.243	(CH ₃) ₂ CH	CHF ₂	H	H	SO ₂	
4.244	CH ₃ (CH ₂) ₃	CHF ₂	H	H	SO ₂	
4.245	Ph	CHF ₂	H	H	SO ₂	
4.246	CH ₂ Br	CHF ₂	H	H	SO ₂	
4.247	CH ₂ OCH ₃	CHF ₂	H	H	SO ₂	
4.248	CH ₂ SMe	CHF ₂	H	H	SO ₂	
4.249	CH ₂ SO ₂ Me	CHF ₂	H	H	SO ₂	
4.250	SCH ₃	CHF ₂	H	H	SO ₂	
4.251	SOCH ₃	CHF ₂	H	H	SO ₂	
4.252	SO ₂ CH ₃	CHF ₂	H	H	SO ₂	
4.253	SPh	CHF ₂	H	H	SO ₂	
4.254	SOPh	CHF ₂	H	H	SO ₂	
4.255	SO ₂ Ph	CHF ₂	H	H	SO ₂	
4.256	CH ₃	CF ₃	CH ₃	H	SO ₂	
4.257	CH ₃ CH ₂	CF ₃	CH ₃	H	SO ₂	
4.258	(CH ₃) ₂ CH	CF ₃	CH ₃	H	SO ₂	
4.259	CH ₃ (CH ₂) ₃	CF ₃	CH ₃	H	SO ₂	
4.260	Ph	CF ₃	CH ₃	H	SO ₂	
4.261	CH ₂ Br	CF ₃	CH ₃	H	SO ₂	
4.262	CH ₂ OCH ₃	CF ₃	CH ₃	H	SO ₂	
4.263	CH ₂ SMe	CF ₃	CH ₃	H	SO ₂	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.264	CH ₂ SO ₂ Me	CF ₃	CH ₃	H	SO ₂	
4.265	SCH ₃	CF ₃	CH ₃	H	SO ₂	
4.266	SOCH ₃	CF ₃	CH ₃	H	SO ₂	
4.267	SO ₂ CH ₃	CF ₃	CH ₃	H	SO ₂	
4.268	SPh	CF ₃	CH ₃	H	SO ₂	
4.269	SOPh	CF ₃	CH ₃	H	SO ₂	
4.270	SO ₂ Ph	CF ₃	CH ₃	H	SO ₂	
4.271	CH ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.272	CH ₃ CH ₂	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.273	(CH ₃) ₂ CH	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.274	CH ₃ (CH ₂) ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.275	Ph	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.276	CH ₂ Br	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.277	CH ₂ OCH ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.278	CH ₂ SMe	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.279	CH ₂ SO ₂ Me	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.280	SCH ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.281	SOCH ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.282	SO ₂ CH ₃	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.283	SPh	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.284	SOPh	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.285	SO ₂ Ph	CF ₃ CF ₂	CH ₃	H	SO ₂	
4.286	CH ₃	CHF ₂	CH ₃	H	SO ₂	
4.287	CH ₃ CH ₂	CHF ₂	CH ₃	H	SO ₂	
4.288	(CH ₃) ₂ CH	CHF ₂	CH ₃	H	SO ₂	
4.289	CH ₃ (CH ₂) ₃	CHF ₂	CH ₃	H	SO ₂	
4.290	Ph	CHF ₂	CH ₃	H	SO ₂	
4.291	CH ₂ Br	CHF ₂	CH ₃	H	SO ₂	
4.292	CH ₂ OCH ₃	CHF ₂	CH ₃	H	SO ₂	
4.293	CH ₂ SMe	CHF ₂	CH ₃	H	SO ₂	
4.294	CH ₂ SO ₂ Me	CHF ₂	CH ₃	H	SO ₂	
4.295	SCH ₃	CHF ₂	CH ₃	H	SO ₂	

Compd. no.	R ₇₅	R ₇₆	R ₇₇	R ₇₈	Z	m.p.(°C)
4.296	SOCH ₃	CHF ₂	CH ₃	H	SO ₂	
4.297	SO ₂ CH ₃	CHF ₂	CH ₃	H	SO ₂	
4.298	SPh	CHF ₂	CH ₃	H	SO ₂	
4.299	SOPh	CHF ₂	CH ₃	H	SO ₂	
4.300	SO ₂ Ph	CHF ₂	CH ₃	H	SO ₂	
4.301	CH ₃	CF ₃	H	CH ₃	SO ₂	
4.302	CH ₃ CH ₂	CF ₃	H	CH ₃	SO ₂	
4.303	(CH ₃) ₂ CH	CF ₃	H	CH ₃	SO ₂	
4.304	CH ₃ (CH ₂) ₃	CF ₃	H	CH ₃	SO ₂	
4.305	Ph	CF ₃	H	CH ₃	SO ₂	
4.306	CH ₂ Br	CF ₃	H	CH ₃	SO ₂	
4.307	CH ₂ OCH ₃	CF ₃	H	CH ₃	SO ₂	
4.308	CH ₂ SMe	CF ₃	H	CH ₃	SO ₂	
4.309	CH ₂ SO ₂ Me	CF ₃	H	CH ₃	SO ₂	
4.310	SCH ₃	CF ₃	H	CH ₃	SO ₂	
4.311	SOCH ₃	CF ₃	H	CH ₃	SO ₂	
4.312	SO ₂ CH ₃	CF ₃	H	CH ₃	SO ₂	
4.313	SPh	CF ₃	H	CH ₃	SO ₂	
4.314	SOPh	CF ₃	H	CH ₃	SO ₂	
4.315	SO ₂ Ph	CF ₃	H	CH ₃	SO ₂	

Table 5: Compounds of formula XVI:



Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A1	H	H	H	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A2	CH ₃	H	H	CF ₃
A3	CH ₃ CH ₂	H	H	CF ₃
A4	(CH ₃) ₂ CH	H	H	CF ₃
A5	(CH ₃) ₃ C	H	H	CF ₃
A6	cyclopropyl	H	H	CF ₃
A7	CH ₃ (CH ₂) ₂	H	H	CF ₃
A8	CH ₃ OCH ₂	H	H	CF ₃
A9	CH ₃ O(CH ₂) ₂	H	H	CF ₃
A10	Ph	H	H	CF ₃
A11	PhO	H	H	CF ₃
A12	PhS	H	H	CF ₃
A13	PhSO	H	H	CF ₃
A14	PhSO ₂	H	H	CF ₃
A15	CH ₃ S	H	H	CF ₃
A16	CH ₃ SO	H	H	CF ₃
A17	CF ₃	H	H	CF ₃
A18	F ₂ CH	H	H	CF ₃
A19	HCC	H	H	CF ₃
A20	CH ₃ CC	H	H	CF ₃
A21	CH ₂ =CH	H	H	CF ₃
A22	CH ₂ =CHCH ₂	H	H	CF ₃
A23	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃
A24	(CH ₃) ₂ N	H	H	CF ₃
A25	(CH ₃) ₂ NSO ₂	H	H	CF ₃
A26	ClCH ₂	H	H	CF ₃
A27	CH ₃ SCH ₂	H	H	CF ₃
A28	CH ₃ SOCH ₂	H	H	CF ₃
A29	CH ₃ SO ₂ CH ₂	H	H	CF ₃
A30	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃
A31	CH ₃	CF ₃	H	CH ₃
A32	CH ₃	CH ₃	H	CF ₃
A33	H	H	H	CF ₃ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A34	CH ₃	H	H	CF ₃ CF ₂
A35	CH ₃ CH ₂	H	H	CF ₃ CF ₂
A36	cyclopropyl	H	H	CF ₃ CF ₂
A37	(CH ₃) ₃ C	H	H	CF ₃ CF ₂
A38	(CH ₃) ₂ CH	H	H	CF ₃ CF ₂
A39	CH ₃ (CH ₂) ₂	H	H	CF ₃ CF ₂
A40	CH ₃ OCH ₂	H	H	CF ₃ CF ₂
A41	CH ₃ O(CH ₂) ₂	H	H	CF ₃ CF ₂
A42	Ph	H	H	CF ₃ CF ₂
A43	PhO	H	H	CF ₃ CF ₂
A44	PhS	H	H	CF ₃ CF ₂
A45	PhSO	H	H	CF ₃ CF ₂
A46	PhSO ₂	H	H	CF ₃ CF ₂
A47	CH ₃ S	H	H	CF ₃ CF ₂
A48	CH ₃ SO	H	H	CF ₃ CF ₂
A49	CF ₃	H	H	CF ₃ CF ₂
A50	F ₂ CH	H	H	CF ₃ CF ₂
A51	HCC	H	H	CF ₃ CF ₂
A52	CH ₃ CC	H	H	CF ₃ CF ₂
A53	CH ₂ =CH	H	H	CF ₃ CF ₂
A54	CH ₂ =CHCH ₂	H	H	CF ₃ CF ₂
A55	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃ CF ₂
A56	(CH ₃) ₂ N	H	H	CF ₃ CF ₂
A57	(CH ₃) ₂ NSO ₂	H	H	CF ₃ CF ₂
A58	ClCH ₂	H	H	CF ₃ CF ₂
A59	CH ₃ SCH ₂	H	H	CF ₃ CF ₂
A60	CH ₃ SOCH ₂	H	H	CF ₃ CF ₂
A61	CH ₃ SO ₂ CH ₂	H	H	CF ₃ CF ₂
A62	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃ CF ₂
A63	H	H	H	CF ₃ CF ₂ CF ₂
A64	CH ₃	H	H	CF ₃ CF ₂ CF ₂
A65	CH ₃ CH ₂	H	H	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A66	cyclopropyl	H	H	CF ₃ CF ₂ CF ₂
A67	(CH ₃) ₃ C	H	H	CF ₃ CF ₂ CF ₂
A68	(CH ₃) ₂ CH	H	H	CF ₃ CF ₂ CF ₂
A69	CH ₃ (CH ₂) ₂	H	H	CF ₃ CF ₂ CF ₂
A70	CH ₃ OCH ₂	H	H	CF ₃ CF ₂ CF ₂
A71	CH ₃ O(CH ₂) ₂	H	H	CF ₃ CF ₂ CF ₂
A72	Ph	H	H	CF ₃ CF ₂ CF ₂
A73	PhO	H	H	CF ₃ CF ₂ CF ₂
A74	PhS	H	H	CF ₃ CF ₂ CF ₂
A75	PhSO	H	H	CF ₃ CF ₂ CF ₂
A76	PhSO ₂	H	H	CF ₃ CF ₂ CF ₂
A77	CH ₃ S	H	H	CF ₃ CF ₂ CF ₂
A78	CH ₃ SO	H	H	CF ₃ CF ₂ CF ₂
A79	CF ₃	H	H	CF ₃ CF ₂ CF ₂
A80	F ₂ CH	H	H	CF ₃ CF ₂ CF ₂
A81	HCC	H	H	CF ₃ CF ₂ CF ₂
A82	CH ₃ CC	H	H	CF ₃ CF ₂ CF ₂
A83	CH ₂ =CH	H	H	CF ₃ CF ₂ CF ₂
A84	CH ₂ =CHCH ₂	H	H	CF ₃ CF ₂ CF ₂
A85	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃ CF ₂ CF ₂
A86	(CH ₃) ₂ N	H	H	CF ₃ CF ₂ CF ₂
A87	(CH ₃) ₂ NSO ₂	H	H	CF ₃ CF ₂ CF ₂
A88	ClCH ₂	H	H	CF ₃ CF ₂ CF ₂
A89	CH ₃ SCH ₂	H	H	CF ₃ CF ₂ CF ₂
A90	CH ₃ SOCH ₂	H	H	CF ₃ CF ₂ CF ₂
A91	CH ₃ SO ₂ CH ₂	H	H	CF ₃ CF ₂ CF ₂
A92	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃ CF ₂ CF ₂
A93	H	H	H	CF ₂ Cl
A94	CH ₃	H	H	CF ₂ Cl
A95	CH ₃ CH ₂	H	H	CF ₂ Cl
A96	cyclopropyl	H	H	CF ₂ Cl
A97	(CH ₃) ₃ C	H	H	CF ₂ Cl

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A98	(CH ₃) ₂ CH	H	H	CF ₂ Cl
A99	CH ₃ (CH ₂) ₂	H	H	CF ₂ Cl
A100	CH ₃ OCH ₂	H	H	CF ₂ Cl
A101	CH ₃ O(CH ₂) ₂	H	H	CF ₂ Cl
A102	Ph	H	H	CF ₂ Cl
A103	PhO	H	H	CF ₂ Cl
A104	PhS	H	H	CF ₂ Cl
A105	PhSO	H	H	CF ₂ Cl
A106	PhSO ₂	H	H	CF ₂ Cl
A107	CH ₃ S	H	H	CF ₂ Cl
A108	CH ₃ SO	H	H	CF ₂ Cl
A109	CF ₃	H	H	CF ₂ Cl
A110	F ₂ CH	H	H	CF ₂ Cl
A111	HCC	H	H	CF ₂ Cl
A112	CH ₃ CC	H	H	CF ₂ Cl
A113	CH ₂ =CH	H	H	CF ₂ Cl
A114	CH ₂ =CHCH ₂	H	H	CF ₂ Cl
A115	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₂ Cl
A116	(CH ₃) ₂ N	H	H	CF ₂ Cl
A117	(CH ₃) ₂ NSO ₂	H	H	CF ₂ Cl
A118	ClCH ₂	H	H	CF ₂ Cl
A119	CH ₃ SCH ₂	H	H	CF ₂ Cl
A120	CH ₃ SOCH ₂	H	H	CF ₂ Cl
A121	CH ₃ SO ₂ CH ₂	H	H	CF ₂ Cl
A122	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₂ Cl
A123	H	H	H	CHF ₂
A124	CH ₃	H	H	CHF ₂
A125	CH ₃ CH ₂	H	H	CHF ₂
A126	cyclopropyl	H	H	CHF ₂
A127	(CH ₃) ₃ C	H	H	CHF ₂
A128	(CH ₃) ₂ CH	H	H	CHF ₂
A129	CH ₃ (CH ₂) ₂	H	H	CHF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A130	CH ₃ OCH ₂	H	H	CHF ₂
A131	CH ₃ O(CH ₂) ₂	H	H	CHF ₂
A132	Ph	H	H	CHF ₂
A133	PhO	H	H	CHF ₂
A134	PhS	H	H	CHF ₂
A135	PhSO	H	H	CHF ₂
A136	PhSO ₂	H	H	CHF ₂
A137	CH ₃ S	H	H	CHF ₂
A138	CH ₃ SO	H	H	CHF ₂
A139	CF ₃	H	H	CHF ₂
A140	F ₂ CH	H	H	CHF ₂
A141	HCC	H	H	CHF ₂
A142	CH ₃ CC	H	H	CHF ₂
A143	CH ₂ =CH	H	H	CHF ₂
A144	CH ₂ =CHCH ₂	H	H	CHF ₂
A145	CH ₃ SO ₂ N(CH ₃)	H	H	CHF ₂
A146	(CH ₃) ₂ N	H	H	CHF ₂
A147	(CH ₃) ₂ NSO ₂	H	H	CHF ₂
A148	ClCH ₂	H	H	CHF ₂
A149	CH ₃ SCH ₂	H	H	CHF ₂
A150	CH ₃ SOCH ₂	H	H	CHF ₂
A151	CH ₃ SO ₂ CH ₂	H	H	CHF ₂
A152	[1,2,4]-triazol-1-yl-methyl	H	H	CHF ₂
A153	H	H	H	CCl ₃
A154	CH ₃	H	H	CCl ₃
A155	CH ₃ CH ₂	H	H	CCl ₃
A156	cyclopropyl	H	H	CCl ₃
A157	(CH ₃) ₃ C	H	H	CCl ₃
A158	(CH ₃) ₂ CH	H	H	CCl ₃
A159	CH ₃ (CH ₂) ₂	H	H	CCl ₃
A160	CH ₃ OCH ₂	H	H	CCl ₃
A161	CH ₃ O(CH ₂) ₂	H	H	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A162	Ph	H	H	CCl ₃
A163	PhO	H	H	CCl ₃
A164	PhS	H	H	CCl ₃
A165	PhSO	H	H	CCl ₃
A166	PhSO ₂	H	H	CCl ₃
A167	CH ₃ S	H	H	CCl ₃
A168	CH ₃ SO	H	H	CCl ₃
A169	CF ₃	H	H	CCl ₃
A170	F ₂ CH	H	H	CCl ₃
A171	HCC	H	H	CCl ₃
A172	CH ₃ CC	H	H	CCl ₃
A173	CH ₂ =CH	H	H	CCl ₃
A174	CH ₂ =CHCH ₂	H	H	CCl ₃
A175	CH ₃ SO ₂ N(CH ₃)	H	H	CCl ₃
A176	(CH ₃) ₂ N	H	H	CCl ₃
A177	(CH ₃) ₂ NSO ₂	H	H	CCl ₃
A178	ClCH ₂	H	H	CCl ₃
A179	CH ₃ SCH ₂	H	H	CCl ₃
A180	CH ₃ SOCH ₂	H	H	CCl ₃
A181	CH ₃ SO ₂ CH ₂	H	H	CCl ₃
A182	[1,2,4]-triazol-1-yl-methyl	H	H	CCl ₃
A183	H	H	CH ₃	CF ₃
A184	CH ₃	H	CH ₃	CF ₃
A185	CH ₃ CH ₂	H	CH ₃	CF ₃
A186	cyclopropyl	H	CH ₃	CF ₃
A187	(CH ₃) ₃ C	H	CH ₃	CF ₃
A188	(CH ₃) ₂ CH	H	CH ₃	CF ₃
A189	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃
A190	CH ₃ OCH ₂	H	CH ₃	CF ₃
A191	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃
A192	Ph	H	CH ₃	CF ₃
A193	PhO	H	CH ₃	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A194	PhS	H	CH ₃	CF ₃
A195	PhSO	H	CH ₃	CF ₃
A196	PhSO ₂	H	CH ₃	CF ₃
A197	CH ₃ S	H	CH ₃	CF ₃
A198	CH ₃ SO	H	CH ₃	CF ₃
A199	CF ₃	H	CH ₃	CF ₃
A200	F ₂ CH	H	CH ₃	CF ₃
A201	HCC	H	CH ₃	CF ₃
A202	CH ₃ CC	H	CH ₃	CF ₃
A203	CH ₂ =CH	H	CH ₃	CF ₃
A204	CH ₂ =CHCH ₂	H	CH ₃	CF ₃
A205	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃
A206	(CH ₃) ₂ N	H	CH ₃	CF ₃
A207	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃
A208	ClCH ₂	H	CH ₃	CF ₃
A209	CH ₃ SCH ₂	H	CH ₃	CF ₃
A210	CH ₃ SOCH ₂	H	CH ₃	CF ₃
A211	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃
A212	H	H	CH ₃	CF ₃ CF ₂
A213	CH ₃	H	CH ₃	CF ₃ CF ₂
A214	CH ₃ CH ₂	H	CH ₃	CF ₃ CF ₂
A215	cyclopropyl	H	CH ₃	CF ₃ CF ₂
A216	(CH ₃) ₃ C	H	CH ₃	CF ₃ CF ₂
A217	(CH ₃) ₂ CH	H	CH ₃	CF ₃ CF ₂
A218	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃ CF ₂
A219	CH ₃ OCH ₂	H	CH ₃	CF ₃ CF ₂
A220	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃ CF ₂
A221	Ph	H	CH ₃	CF ₃ CF ₂
A222	PhO	H	CH ₃	CF ₃ CF ₂
A223	PhS	H	CH ₃	CF ₃ CF ₂
A224	PhSO	H	CH ₃	CF ₃ CF ₂
A225	PhSO ₂	H	CH ₃	CF ₃ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A226	CH ₃ S	H	CH ₃	CF ₃ CF ₂
A227	CH ₃ SO	H	CH ₃	CF ₃ CF ₂
A228	CF ₃	H	CH ₃	CF ₃ CF ₂
A229	F ₂ CH	H	CH ₃	CF ₃ CF ₂
A230	HCC	H	CH ₃	CF ₃ CF ₂
A231	CH ₃ CC	H	CH ₃	CF ₃ CF ₂
A232	CH ₂ =CH	H	CH ₃	CF ₃ CF ₂
A233	CH ₂ =CHCH ₂	H	CH ₃	CF ₃ CF ₂
A234	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃ CF ₂
A235	(CH ₃) ₂ N	H	CH ₃	CF ₃ CF ₂
A236	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃ CF ₂
A237	ClCH ₂	H	CH ₃	CF ₃ CF ₂
A238	CH ₃ SCH ₂	H	CH ₃	CF ₃ CF ₂
A239	CH ₃ SOCH ₂	H	CH ₃	CF ₃ CF ₂
A240	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃ CF ₂
A241	H	H	CH ₃	CF ₃ CF ₂ CF ₂
A242	CH ₃	H	CH ₃	CF ₃ CF ₂ CF ₂
A243	CH ₃ CH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A244	cyclopropyl	H	CH ₃	CF ₃ CF ₂ CF ₂
A245	(CH ₃) ₃ C	H	CH ₃	CF ₃ CF ₂ CF ₂
A246	(CH ₃) ₂ CH	H	CH ₃	CF ₃ CF ₂ CF ₂
A247	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A248	CH ₃ OCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A249	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A250	Ph	H	CH ₃	CF ₃ CF ₂ CF ₂
A251	PhO	H	CH ₃	CF ₃ CF ₂ CF ₂
A252	PhS	H	CH ₃	CF ₃ CF ₂ CF ₂
A253	PhSO	H	CH ₃	CF ₃ CF ₂ CF ₂
A254	PhSO ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A255	CH ₃ S	H	CH ₃	CF ₃ CF ₂ CF ₂
A256	CH ₃ SO	H	CH ₃	CF ₃ CF ₂ CF ₂
A257	CF ₃	H	CH ₃	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A258	F ₂ CH	H	CH ₃	CF ₃ CF ₂ CF ₂
A259	HCC	H	CH ₃	CF ₃ CF ₂ CF ₂
A260	CH ₃ CC	H	CH ₃	CF ₃ CF ₂ CF ₂
A261	CH ₂ =CH	H	CH ₃	CF ₃ CF ₂ CF ₂
A262	CH ₂ =CHCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A263	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃ CF ₂ CF ₂
A264	(CH ₃) ₂ N	H	CH ₃	CF ₃ CF ₂ CF ₂
A265	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A266	ClCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A267	CH ₃ SCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A268	CH ₃ SOCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A269	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂
A270	H	H	CH ₃	CF ₂ Cl
A271	CH ₃	H	CH ₃	CF ₂ Cl
A272	CH ₃ CH ₂	H	CH ₃	CF ₂ Cl
A273	cyclopropyl	H	CH ₃	CF ₂ Cl
A274	(CH ₃) ₃ C	H	CH ₃	CF ₂ Cl
A275	(CH ₃) ₂ CH	H	CH ₃	CF ₂ Cl
A276	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₂ Cl
A277	CH ₃ OCH ₂	H	CH ₃	CF ₂ Cl
A278	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₂ Cl
A279	Ph	H	CH ₃	CF ₂ Cl
A280	PhO	H	CH ₃	CF ₂ Cl
A281	PhS	H	CH ₃	CF ₂ Cl
A282	PhSO	H	CH ₃	CF ₂ Cl
A283	PhSO ₂	H	CH ₃	CF ₂ Cl
A284	CH ₃ S	H	CH ₃	CF ₂ Cl
A285	CH ₃ SO	H	CH ₃	CF ₂ Cl
A286	CF ₃	H	CH ₃	CF ₂ Cl
A287	F ₂ CH	H	CH ₃	CF ₂ Cl
A288	HCC	H	CH ₃	CF ₂ Cl
A289	CH ₃ CC	H	CH ₃	CF ₂ Cl

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A290	CH ₂ =CH	H	CH ₃	CF ₂ Cl
A291	CH ₂ =CHCH ₂	H	CH ₃	CF ₂ Cl
A292	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₂ Cl
A293	(CH ₃) ₂ N	H	CH ₃	CF ₂ Cl
A294	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₂ Cl
A295	ClCH ₂	H	CH ₃	CF ₂ Cl
A296	CH ₃ SCH ₂	H	CH ₃	CF ₂ Cl
A297	CH ₃ SOCH ₂	H	CH ₃	CF ₂ Cl
A298	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₂ Cl
A299	H	H	CH ₃	CHF ₂
A300	CH ₃	H	CH ₃	CHF ₂
A301	CH ₃ CH ₂	H	CH ₃	CHF ₂
A302	cyclopropyl	H	CH ₃	CHF ₂
A303	(CH ₃) ₃ C	H	CH ₃	CHF ₂
A304	(CH ₃) ₂ CH	H	CH ₃	CHF ₂
A305	CH ₃ (CH ₂) ₂	H	CH ₃	CHF ₂
A306	CH ₃ OCH ₂	H	CH ₃	CHF ₂
A307	CH ₃ O(CH ₂) ₂	H	CH ₃	CHF ₂
A308	Ph	H	CH ₃	CHF ₂
A309	PhO	H	CH ₃	CHF ₂
A310	PhS	H	CH ₃	CHF ₂
A311	PhSO	H	CH ₃	CHF ₂
A312	PhSO ₂	H	CH ₃	CHF ₂
A313	CH ₃ S	H	CH ₃	CHF ₂
A314	CH ₃ SO	H	CH ₃	CHF ₂
A315	CF ₃	H	CH ₃	CHF ₂
A316	F ₂ CH	H	CH ₃	CHF ₂
A317	HCC	H	CH ₃	CHF ₂
A318	CH ₃ CC	H	CH ₃	CHF ₂
A319	CH ₂ =CH	H	CH ₃	CHF ₂
A320	CH ₂ =CHCH ₂	H	CH ₃	CHF ₂
A321	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CHF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A322	(CH ₃) ₂ N	H	CH ₃	CHF ₂
A323	(CH ₃) ₂ NSO ₂	H	CH ₃	CHF ₂
A324	ClCH ₂	H	CH ₃	CHF ₂
A325	CH ₃ SCH ₂	H	CH ₃	CHF ₂
A326	CH ₃ SOCH ₂	H	CH ₃	CHF ₂
A327	CH ₃ SO ₂ CH ₂	H	CH ₃	CHF ₂
A328	H	H	CH ₃	CCl ₃
A329	CH ₃	H	CH ₃	CCl ₃
A330	CH ₃ CH ₂	H	CH ₃	CCl ₃
A331	(CH ₃) ₃ C	H	CH ₃	CCl ₃
A332	(CH ₃) ₂ CH	H	CH ₃	CCl ₃
A333	cyclopropyl	H	CH ₃	CCl ₃
A334	CH ₃ (CH ₂) ₂	H	CH ₃	CCl ₃
A335	CH ₃ OCH ₂	H	CH ₃	CCl ₃
A336	CH ₃ O(CH ₂) ₂	H	CH ₃	CCl ₃
A337	Ph	H	CH ₃	CCl ₃
A338	PhO	H	CH ₃	CCl ₃
A339	PhS	H	CH ₃	CCl ₃
A340	PhSO	H	CH ₃	CCl ₃
A341	PhSO ₂	H	CH ₃	CCl ₃
A342	CH ₃ S	H	CH ₃	CCl ₃
A343	CH ₃ SO	H	CH ₃	CCl ₃
A344	CF ₃	H	CH ₃	CCl ₃
A345	F ₂ CH	H	CH ₃	CCl ₃
A346	HCC	H	CH ₃	CCl ₃
A347	CH ₃ CC	H	CH ₃	CCl ₃
A348	CH ₂ =CH	H	CH ₃	CCl ₃
A349	CH ₂ =CHCH ₂	H	CH ₃	CCl ₃
A350	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CCl ₃
A351	(CH ₃) ₂ N	H	CH ₃	CCl ₃
A352	(CH ₃) ₂ NSO ₂	H	CH ₃	CCl ₃
A353	ClCH ₂	H	CH ₃	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A354	CH ₃ SCH ₂	H	CH ₃	CCl ₃
A355	CH ₃ SOCH ₂	H	CH ₃	CCl ₃
A356	CH ₃ SO ₂ CH ₂	H	CH ₃	CCl ₃
A357	H	H	Ph	CF ₃
A358	CH ₃	H	Ph	CF ₃
A359	CH ₃ CH ₂	H	Ph	CF ₃
A360	cyclopropyl	H	Ph	CF ₃
A361	(CH ₃) ₃ C	H	Ph	CF ₃
A362	(CH ₃) ₂ CH	H	Ph	CF ₃
A363	CH ₃ (CH ₂) ₂	H	Ph	CF ₃
A364	CH ₃ OCH ₂	H	Ph	CF ₃
A365	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃
A366	Ph	H	Ph	CF ₃
A367	PhO	H	Ph	CF ₃
A368	PhS	H	Ph	CF ₃
A369	PhSO	H	Ph	CF ₃
A370	PhSO ₂	H	Ph	CF ₃
A371	CH ₃ S	H	Ph	CF ₃
A372	CH ₃ SO	H	Ph	CF ₃
A373	CF ₃	H	Ph	CF ₃
A374	F ₂ CH	H	Ph	CF ₃
A375	HCC	H	Ph	CF ₃
A376	CH ₃ CC	H	Ph	CF ₃
A377	CH ₂ =CH	H	Ph	CF ₃
A378	CH ₂ =CHCH ₂	H	Ph	CF ₃
A379	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃
A380	(CH ₃) ₂ N	H	Ph	CF ₃
A381	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃
A382	ClCH ₂	H	Ph	CF ₃
A383	CH ₃ SCH ₂	H	Ph	CF ₃
A384	CH ₃ SOCH ₂	H	Ph	CF ₃
A385	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A386	H	H	Ph	CF ₃ CF ₂
A387	CH ₃	H	Ph	CF ₃ CF ₂
A388	CH ₃ CH ₂	H	Ph	CF ₃ CF ₂
A389	cyclopropyl	H	Ph	CF ₃ CF ₂
A390	(CH ₃) ₃ C	H	Ph	CF ₃ CF ₂
A391	(CH ₃) ₂ CH	H	Ph	CF ₃ CF ₂
A392	CH ₃ (CH ₂) ₂	H	Ph	CF ₃ CF ₂
A393	CH ₃ OCH ₂	H	Ph	CF ₃ CF ₂
A394	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃ CF ₂
A395	Ph	H	Ph	CF ₃ CF ₂
A396	PhO	H	Ph	CF ₃ CF ₂
A397	PhS	H	Ph	CF ₃ CF ₂
A398	PhSO	H	Ph	CF ₃ CF ₂
A399	PhSO ₂	H	Ph	CF ₃ CF ₂
A400	CH ₃ S	H	Ph	CF ₃ CF ₂
A401	CH ₃ SO	H	Ph	CF ₃ CF ₂
A402	CF ₃	H	Ph	CF ₃ CF ₂
A403	F ₂ CH	H	Ph	CF ₃ CF ₂
A404	HCC	H	Ph	CF ₃ CF ₂
A405	CH ₃ CC	H	Ph	CF ₃ CF ₂
A406	CH ₂ =CH	H	Ph	CF ₃ CF ₂
A407	CH ₂ =CHCH ₂	H	Ph	CF ₃ CF ₂
A408	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃ CF ₂
A409	(CH ₃) ₂ N	H	Ph	CF ₃ CF ₂
A410	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃ CF ₂
A411	ClCH ₂	H	Ph	CF ₃ CF ₂
A412	CH ₃ SCH ₂	H	Ph	CF ₃ CF ₂
A413	CH ₃ SOCH ₂	H	Ph	CF ₃ CF ₂
A414	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃ CF ₂
A415	H	H	Ph	CF ₃ CF ₂ CF ₂
A416	CH ₃	H	Ph	CF ₃ CF ₂ CF ₂
A417	CH ₃ CH ₂	H	Ph	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A418	cyclopropyl	H	Ph	CF ₃ CF ₂ CF ₂
A419	(CH ₃) ₃ C	H	Ph	CF ₃ CF ₂ CF ₂
A420	(CH ₃) ₂ CH	H	Ph	CF ₃ CF ₂ CF ₂
A421	CH ₃ (CH ₂) ₂	H	Ph	CF ₃ CF ₂ CF ₂
A422	CH ₃ OCH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A423	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃ CF ₂ CF ₂
A424	Ph	H	Ph	CF ₃ CF ₂ CF ₂
A425	PhO	H	Ph	CF ₃ CF ₂ CF ₂
A426	PhS	H	Ph	CF ₃ CF ₂ CF ₂
A427	PhSO	H	Ph	CF ₃ CF ₂ CF ₂
A428	PhSO ₂	H	Ph	CF ₃ CF ₂ CF ₂
A429	CH ₃ S	H	Ph	CF ₃ CF ₂ CF ₂
A430	CH ₃ SO	H	Ph	CF ₃ CF ₂ CF ₂
A431	CF ₃	H	Ph	CF ₃ CF ₂ CF ₂
A432	F ₂ CH	H	Ph	CF ₃ CF ₂ CF ₂
A433	HCC	H	Ph	CF ₃ CF ₂ CF ₂
A434	CH ₃ CC	H	Ph	CF ₃ CF ₂ CF ₂
A435	CH ₂ =CH	H	Ph	CF ₃ CF ₂ CF ₂
A436	CH ₂ =CHCH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A437	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃ CF ₂ CF ₂
A438	(CH ₃) ₂ N	H	Ph	CF ₃ CF ₂ CF ₂
A439	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃ CF ₂ CF ₂
A440	ClCH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A441	CH ₃ SCH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A442	CH ₃ SOCH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A443	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃ CF ₂ CF ₂
A444	H	H	Ph	CF ₂ Cl
A445	CH ₃	H	Ph	CF ₂ Cl
A446	CH ₃ CH ₂	H	Ph	CF ₂ Cl
A447	cyclopropyl	H	Ph	CF ₂ Cl
A448	(CH ₃) ₃ C	H	Ph	CF ₂ Cl
A449	(CH ₃) ₂ CH	H	Ph	CF ₂ Cl

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A450	CH ₃ (CH ₂) ₂	H	Ph	CF ₂ Cl
A451	CH ₃ OCH ₂	H	Ph	CF ₂ Cl
A452	CH ₃ O(CH ₂) ₂	H	Ph	CF ₂ Cl
A453	Ph	H	Ph	CF ₂ Cl
A454	PhO	H	Ph	CF ₂ Cl
A455	PhS	H	Ph	CF ₂ Cl
A456	PhSO	H	Ph	CF ₂ Cl
A457	PhSO ₂	H	Ph	CF ₂ Cl
A458	CH ₃ S	H	Ph	CF ₂ Cl
A459	CH ₃ SO	H	Ph	CF ₂ Cl
A460	CF ₃	H	Ph	CF ₂ Cl
A461	F ₂ CH	H	Ph	CF ₂ Cl
A462	HCC	H	Ph	CF ₂ Cl
A463	CH ₃ CC	H	Ph	CF ₂ Cl
A464	CH ₂ =CH	H	Ph	CF ₂ Cl
A465	CH ₂ =CHCH ₂	H	Ph	CF ₂ Cl
A466	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₂ Cl
A467	(CH ₃) ₂ N	H	Ph	CF ₂ Cl
A468	(CH ₃) ₂ NSO ₂	H	Ph	CF ₂ Cl
A469	ClCH ₂	H	Ph	CF ₂ Cl
A470	CH ₃ SCH ₂	H	Ph	CF ₂ Cl
A471	CH ₃ SOCH ₂	H	Ph	CF ₂ Cl
A472	CH ₃ SO ₂ CH ₂	H	Ph	CF ₂ Cl
A473	H	H	Ph	CHF ₂
A474	CH ₃	H	Ph	CHF ₂
A475	CH ₃ CH ₂	H	Ph	CHF ₂
A476	cyclopropyl	H	Ph	CHF ₂
A477	(CH ₃) ₃ C	H	Ph	CHF ₂
A478	(CH ₃) ₂ CH	H	Ph	CHF ₂
A479	CH ₃ (CH ₂) ₂	H	Ph	CHF ₂
A480	CH ₃ OCH ₂	H	Ph	CHF ₂
A481	CH ₃ O(CH ₂) ₂	H	Ph	CHF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A482	Ph	H	Ph	CHF ₂
A483	PhO	H	Ph	CHF ₂
A484	PhS	H	Ph	CHF ₂
A485	PhSO	H	Ph	CHF ₂
A486	PhSO ₂	H	Ph	CHF ₂
A487	CH ₃ S	H	Ph	CHF ₂
A488	CH ₃ SO	H	Ph	CHF ₂
A489	CF ₃	H	Ph	CHF ₂
A490	F ₂ CH	H	Ph	CHF ₂
A491	HCC	H	Ph	CHF ₂
A492	CH ₃ CC	H	Ph	CHF ₂
A493	CH ₂ =CH	H	Ph	CHF ₂
A494	CH ₂ =CHCH ₂	H	Ph	CHF ₂
A495	CH ₃ SO ₂ N(CH ₃)	H	Ph	CHF ₂
A496	(CH ₃) ₂ N	H	Ph	CHF ₂
A497	(CH ₃) ₂ NSO ₂	H	Ph	CHF ₂
A498	ClCH ₂	H	Ph	CHF ₂
A499	CH ₃ SCH ₂	H	Ph	CHF ₂
A500	CH ₃ SOCH ₂	H	Ph	CHF ₂
A501	CH ₃ SO ₂ CH ₂	H	Ph	CHF ₂
A502	H	H	Ph	CCl ₃
A503	CH ₃	H	Ph	CCl ₃
A504	CH ₃ CH ₂	H	Ph	CCl ₃
A505	cyclopropyl	H	Ph	CCl ₃
A506	(CH ₃) ₃ C	H	Ph	CCl ₃
A507	(CH ₃) ₂ CH	H	Ph	CCl ₃
A508	CH ₃ (CH ₂) ₂	H	Ph	CCl ₃
A509	CH ₃ OCH ₂	H	Ph	CCl ₃
A510	CH ₃ O(CH ₂) ₂	H	Ph	CCl ₃
A511	Ph	H	Ph	CCl ₃
A512	PhO	H	Ph	CCl ₃
A513	PhS	H	Ph	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A514	PhSO	H	Ph	CCl ₃
A515	PhSO ₂	H	Ph	CCl ₃
A516	CH ₃ S	H	Ph	CCl ₃
A517	CH ₃ SO	H	Ph	CCl ₃
A518	CF ₃	H	Ph	CCl ₃
A519	F ₂ CH	H	Ph	CCl ₃
A520	HCC	H	Ph	CCl ₃
A521	CH ₃ CC	H	Ph	CCl ₃
A522	CH ₂ =CH	H	Ph	CCl ₃
A523	CH ₂ =CHCH ₂	H	Ph	CCl ₃
A524	CH ₃ SO ₂ N(CH ₃)	H	Ph	CCl ₃
A525	(CH ₃) ₂ N	H	Ph	CCl ₃
A526	(CH ₃) ₂ NSO ₂	H	Ph	CCl ₃
A527	ClCH ₂	H	Ph	CCl ₃
A528	CH ₃ SCH ₂	H	Ph	CCl ₃
A529	CH ₃ SOCH ₂	H	Ph	CCl ₃
A530	CH ₃ SO ₂ CH ₂	H	Ph	CCl ₃
A531	H	CH ₃	H	CF ₃
A532	H	CH ₃ CH ₂	H	CF ₃
A533	H	cyclopropyl	H	CF ₃
A534	H	(CH ₃) ₃ CH	H	CF ₃
A535	H	(CH ₃) ₂ CH	H	CF ₃
A536	H	CH ₃ (CH ₂) ₂	H	CF ₃
A537	H	CH ₃ OCH ₂	H	CF ₃
A538	H	CH ₃ O(CH ₂) ₂	H	CF ₃
A539	H	Ph	H	CF ₃
A540	H	PhO	H	CF ₃
A541	H	PhS	H	CF ₃
A542	H	PhSO	H	CF ₃
A543	H	PhSO ₂	H	CF ₃
A544	H	CH ₃ S	H	CF ₃
A545	H	CH ₃ SO	H	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A546	H	CF ₃	H	CF ₃
A547	H	F ₂ CH	H	CF ₃
A548	H	HCC	H	CF ₃
A549	H	CH ₃ CC	H	CF ₃
A550	H	CH ₂ =CH	H	CF ₃
A551	H	CH ₂ =CHCH ₂	H	CF ₃
A552	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃
A553	H	(CH ₃) ₂ N	H	CF ₃
A554	H	(CH ₃) ₂ NSO ₂	H	CF ₃
A555	H	CH ₃ SCH ₂	H	CF ₃
A556	H	CH ₃ SOCH ₂	H	CF ₃
A557	H	CH ₃ SO ₂ CH ₂	H	CF ₃
A558	H	CH ₃	H	CF ₃ CF ₂
A559	H	CH ₃ CH ₂	H	CF ₃ CF ₂
A560	H	cyclopropyl	H	CF ₃ CF ₂
A561	H	(CH ₃) ₃ C	H	CF ₃ CF ₂
A562	H	(CH ₃) ₂ CH	H	CF ₃ CF ₂
A563	H	CH ₃ (CH ₂) ₂	H	CF ₃ CF ₂
A564	H	CH ₃ OCH ₂	H	CF ₃ CF ₂
A565	H	CH ₃ O(CH ₂) ₂	H	CF ₃ CF ₂
A566	H	Ph	H	CF ₃ CF ₂
A567	H	PhO	H	CF ₃ CF ₂
A568	H	PhS	H	CF ₃ CF ₂
A569	H	PhSO	H	CF ₃ CF ₂
A570	H	PhSO ₂	H	CF ₃ CF ₂
A571	H	CH ₃ S	H	CF ₃ CF ₂
A572	H	CH ₃ SO	H	CF ₃ CF ₂
A573	H	CF ₃	H	CF ₃ CF ₂
A574	H	F ₂ CH	H	CF ₃ CF ₂
A575	H	HCC	H	CF ₃ CF ₂
A576	H	CH ₃ CC	H	CF ₃ CF ₂
A577	H	CH ₂ =CH	H	CF ₃ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A578	H	CH ₂ =CHCH ₂	H	CF ₃ CF ₂
A579	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃ CF ₂
A580	H	(CH ₃) ₂ N	H	CF ₃ CF ₂
A581	H	(CH ₃) ₂ NSO ₂	H	CF ₃ CF ₂
A582	H	CH ₃ SCH ₂	H	CF ₃ CF ₂
A583	H	CH ₃ SOCH ₂	H	CF ₃ CF ₂
A584	H	CH ₃ SO ₂ CH ₂	H	CF ₃ CF ₂
A585	H	CH ₃	H	CF ₃ CF ₂ CF ₂
A586	H	CH ₃ CH ₂	H	CF ₃ CF ₂ CF ₂
A587	H	cyclopropyl	H	CF ₃ CF ₂ CF ₂
A588	H	(CH ₃) ₃ C	H	CF ₃ CF ₂ CF ₂
A589	H	(CH ₃) ₂ CH	H	CF ₃ CF ₂ CF ₂
A590	H	CH ₃ (CH ₂) ₂	H	CF ₃ CF ₂ CF ₂
A591	H	CH ₃ OCH ₂	H	CF ₃ CF ₂ CF ₂
A592	H	CH ₃ O(CH ₂) ₂	H	CF ₃ CF ₂ CF ₂
A593	H	Ph	H	CF ₃ CF ₂ CF ₂
A594	H	PhO	H	CF ₃ CF ₂ CF ₂
A595	H	PhS	H	CF ₃ CF ₂ CF ₂
A596	H	PhSO	H	CF ₃ CF ₂ CF ₂
A597	H	PhSO ₂	H	CF ₃ CF ₂ CF ₂
A598	H	CH ₃ S	H	CF ₃ CF ₂ CF ₂
A599	H	CH ₃ SO	H	CF ₃ CF ₂ CF ₂
A600	H	CF ₃	H	CF ₃ CF ₂ CF ₂
A601	H	F ₂ CH	H	CF ₃ CF ₂ CF ₂
A602	H	HCC	H	CF ₃ CF ₂ CF ₂
A603	H	CH ₃ CC	H	CF ₃ CF ₂ CF ₂
A604	H	CH ₂ =CH	H	CF ₃ CF ₂ CF ₂
A605	H	CH ₂ =CHCH ₂	H	CF ₃ CF ₂ CF ₂
A606	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃ CF ₂ CF ₂
A607	H	(CH ₃) ₂ N	H	CF ₃ CF ₂ CF ₂
A608	H	(CH ₃) ₂ NSO ₂	H	CF ₃ CF ₂ CF ₂
A609	H	CH ₃ SCH ₂	H	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A610	H	CH ₃ SOCH ₂	H	CF ₃ CF ₂ CF ₂
A611	H	CH ₃ SO ₂ CH ₂	H	CF ₃ CF ₂ CF ₂
A612	H	CH ₃	H	CF ₂ Cl
A613	H	CH ₃ CH ₂	H	CF ₂ Cl
A614	H	cyclopropyl	H	CF ₂ Cl
A615	H	(CH ₃) ₃ C	H	CF ₂ Cl
A616	H	(CH ₃) ₂ CH	H	CF ₂ Cl
A617	H	CH ₃ (CH ₂) ₂	H	CF ₂ Cl
A618	H	CH ₃ OCH ₂	H	CF ₂ Cl
A619	H	CH ₃ O(CH ₂) ₂	H	CF ₂ Cl
A620	H	Ph	H	CF ₂ Cl
A621	H	PhO	H	CF ₂ Cl
A622	H	PhS	H	CF ₂ Cl
A623	H	PhSO	H	CF ₂ Cl
A624	H	PhSO ₂	H	CF ₂ Cl
A625	H	CH ₃ S	H	CF ₂ Cl
A626	H	CH ₃ SO	H	CF ₂ Cl
A627	H	CF ₃	H	CF ₂ Cl
A628	H	F ₂ CH	H	CF ₂ Cl
A629	H	HCC	H	CF ₂ Cl
A630	H	CH ₃ CC	H	CF ₂ Cl
A631	H	CH ₂ =CH	H	CF ₂ Cl
A632	H	CH ₂ =CHCH ₂	H	CF ₂ Cl
A633	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₂ Cl
A634	H	(CH ₃) ₂ N	H	CF ₂ Cl
A635	H	(CH ₃) ₂ NSO ₂	H	CF ₂ Cl
A636	H	CH ₃ SCH ₂	H	CF ₂ Cl
A637	H	CH ₃ SOCH ₂	H	CF ₂ Cl
A638	H	CH ₃ SO ₂ CH ₂	H	CF ₂ Cl
A639	H	CH ₃	H	CHF ₂
A640	H	CH ₃ CH ₂	H	CHF ₂
A641	H	cyclopropyl	H	CHF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A642	H	(CH ₃) ₃ C	H	CHF ₂
A643	H	(CH ₃) ₂ CH	H	CHF ₂
A644	H	CH ₃ (CH ₂) ₂	H	CHF ₂
A645	H	CH ₃ OCH ₂	H	CHF ₂
A646	H	CH ₃ O(CH ₂) ₂	H	CHF ₂
A647	H	Ph	H	CHF ₂
A648	H	PhO	H	CHF ₂
A649	H	PhS	H	CHF ₂
A650	H	PhSO	H	CHF ₂
A651	H	PhSO ₂	H	CHF ₂
A652	H	CH ₃ S	H	CHF ₂
A653	H	CH ₃ SO	H	CHF ₂
A654	H	CF ₃	H	CHF ₂
A655	H	F ₂ CH	H	CHF ₂
A656	H	HCC	H	CHF ₂
A657	H	CH ₃ CC	H	CHF ₂
A658	H	CH ₂ =CH	H	CHF ₂
A659	H	CH ₂ =CHCH ₂	H	CHF ₂
A660	H	CH ₃ SO ₂ N(CH ₃)	H	CHF ₂
A661	H	(CH ₃) ₂ N	H	CHF ₂
A662	H	(CH ₃) ₂ NSO ₂	H	CHF ₂
A663	H	CH ₃ SCH ₂	H	CHF ₂
A664	H	CH ₃ SOCH ₂	H	CHF ₂
A665	H	CH ₃ SO ₂ CH ₂	H	CHF ₂
A666	H	CH ₃	H	CCl ₃
A667	H	CH ₃ CH ₂	H	CCl ₃
A668	H	cyclopropyl	H	CCl ₃
A669	H	(CH ₃) ₃ C	H	CCl ₃
A670	H	(CH ₃) ₂ CH	H	CCl ₃
A671	H	CH ₃ (CH ₂) ₂	H	CCl ₃
A672	H	CH ₃ OCH ₂	H	CCl ₃
A673	H	CH ₃ O(CH ₂) ₂	H	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A674	H	Ph	H	CCl ₃
A675	H	PhO	H	CCl ₃
A676	H	PhS	H	CCl ₃
A677	H	PhSO	H	CCl ₃
A678	H	PhSO ₂	H	CCl ₃
A679	H	CH ₃ S	H	CCl ₃
A680	H	CH ₃ SO	H	CCl ₃
A681	H	CF ₃	H	CCl ₃
A682	H	F ₂ CH	H	CCl ₃
A683	H	HCC	H	CCl ₃
A684	H	CH ₃ CC	H	CCl ₃
A685	H	CH ₂ =CH	H	CCl ₃
A686	H	CH ₂ =CHCH ₂	H	CCl ₃
A687	H	CH ₃ SO ₂ N(CH ₃)	H	CCl ₃
A688	H	(CH ₃) ₂ N	H	CCl ₃
A689	H	(CH ₃) ₂ NSO ₂	H	CCl ₃
A690	H	CH ₃ SCH ₂	H	CCl ₃
A691	H	CH ₃ SOCH ₂	H	CCl ₃
A692	H	CH ₃ SO ₂ CH ₂	H	CCl ₃
A693	H	CH ₃	CH ₃	CF ₃
A694	H	CH ₃ CH ₂	CH ₃	CF ₃
A695	H	cyclopropyl	CH ₃	CF ₃
A696	H	(CH ₃) ₃ C	CH ₃	CF ₃
A697	H	(CH ₃) ₂ CH	CH ₃	CF ₃
A698	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃
A699	H	CH ₃ OCH ₂	CH ₃	CF ₃
A700	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃
A701	H	Ph	CH ₃	CF ₃
A702	H	PhO	CH ₃	CF ₃
A703	H	PhS	CH ₃	CF ₃
A704	H	PhSO	CH ₃	CF ₃
A705	H	PhSO ₂	CH ₃	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A706	H	CH ₃ S	CH ₃	CF ₃
A707	H	CH ₃ SO	CH ₃	CF ₃
A708	H	CF ₃	CH ₃	CF ₃
A709	H	F ₂ CH	CH ₃	CF ₃
A710	H	HCC	CH ₃	CF ₃
A711	H	CH ₃ CC	CH ₃	CF ₃
A712	H	CH ₂ =CH	CH ₃	CF ₃
A713	H	CH ₂ =CHCH ₂	CH ₃	CF ₃
A714	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃
A715	H	(CH ₃) ₂ N	CH ₃	CF ₃
A716	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃
A717	H	CH ₃ SCH ₂	CH ₃	CF ₃
A718	H	CH ₃ SOCH ₂	CH ₃	CF ₃
A719	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃
A720	H	CH ₃	CH ₃	CF ₃ CF ₂
A721	H	CH ₃ CH ₂	CH ₃	CF ₃ CF ₂
A722	H	cyclopropyl	CH ₃	CF ₃ CF ₂
A723	H	(CH ₃) ₃ C	CH ₃	CF ₃ CF ₂
A724	H	(CH ₃) ₂ CH	CH ₃	CF ₃ CF ₂
A725	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃ CF ₂
A726	H	CH ₃ OCH ₂	CH ₃	CF ₃ CF ₂
A727	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃ CF ₂
A728	H	Ph	CH ₃	CF ₃ CF ₂
A729	H	PhO	CH ₃	CF ₃ CF ₂
A730	H	PhS	CH ₃	CF ₃ CF ₂
A731	H	PhSO	CH ₃	CF ₃ CF ₂
A732	H	PhSO ₂	CH ₃	CF ₃ CF ₂
A733	H	CH ₃ S	CH ₃	CF ₃ CF ₂
A734	H	CH ₃ SO	CH ₃	CF ₃ CF ₂
A735	H	CF ₃	CH ₃	CF ₃ CF ₂
A736	H	F ₂ CH	CH ₃	CF ₃ CF ₂
A737	H	HCC	CH ₃	CF ₃ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A738	H	CH ₃ CC	CH ₃	CF ₃ CF ₂
A739	H	CH ₂ =CH	CH ₃	CF ₃ CF ₂
A740	H	CH ₂ =CHCH ₂	CH ₃	CF ₃ CF ₂
A741	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃ CF ₂
A742	H	(CH ₃) ₂ N	CH ₃	CF ₃ CF ₂
A743	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃ CF ₂
A744	H	CH ₃ SCH ₂	CH ₃	CF ₃ CF ₂
A745	H	CH ₃ SOCH ₂	CH ₃	CF ₃ CF ₂
A746	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃ CF ₂
A747	H	CH ₃	CH ₃	CF ₃ CF ₂ CF ₂
A748	H	CH ₃ CH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A749	H	cyclopropyl	CH ₃	CF ₃ CF ₂ CF ₂
A750	H	(CH ₃) ₃ C	CH ₃	CF ₃ CF ₂ CF ₂
A751	H	(CH ₃) ₂ CH	CH ₃	CF ₃ CF ₂ CF ₂
A752	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃ CF ₂ CF ₂
A753	H	CH ₃ OCH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A754	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃ CF ₂ CF ₂
A755	H	Ph	CH ₃	CF ₃ CF ₂ CF ₂
A756	H	PhO	CH ₃	CF ₃ CF ₂ CF ₂
A757	H	PhS	CH ₃	CF ₃ CF ₂ CF ₂
A758	H	PhSO	CH ₃	CF ₃ CF ₂ CF ₂
A759	H	PhSO ₂	CH ₃	CF ₃ CF ₂ CF ₂
A760	H	CH ₃ S	CH ₃	CF ₃ CF ₂ CF ₂
A761	H	CH ₃ SO	CH ₃	CF ₃ CF ₂ CF ₂
A762	H	CF ₃	CH ₃	CF ₃ CF ₂ CF ₂
A763	H	F ₂ CH	CH ₃	CF ₃ CF ₂ CF ₂
A764	H	HCC	CH ₃	CF ₃ CF ₂ CF ₂
A765	H	CH ₃ CC	CH ₃	CF ₃ CF ₂ CF ₂
A766	H	CH ₂ =CH	CH ₃	CF ₃ CF ₂ CF ₂
A767	H	CH ₂ =CHCH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A768	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃ CF ₂ CF ₂
A769	H	(CH ₃) ₂ N	CH ₃	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A770	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃ CF ₂ CF ₂
A771	H	CH ₃ SCH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A772	H	CH ₃ SOCH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A773	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃ CF ₂ CF ₂
A774	H	CH ₃	CH ₃	CF ₂ Cl
A775	H	CH ₃ CH ₂	CH ₃	CF ₂ Cl
A776	H	cyclopropyl	CH ₃	CF ₂ Cl
A777	H	(CH ₃) ₃ C	CH ₃	CF ₂ Cl
A778	H	(CH ₃) ₂ CH	CH ₃	CF ₂ Cl
A779	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₂ Cl
A780	H	CH ₃ OCH ₂	CH ₃	CF ₂ Cl
A781	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₂ Cl
A782	H	Ph	CH ₃	CF ₂ Cl
A783	H	PhO	CH ₃	CF ₂ Cl
A784	H	PhS	CH ₃	CF ₂ Cl
A785	H	PhSO	CH ₃	CF ₂ Cl
A786	H	PhSO ₂	CH ₃	CF ₂ Cl
A787	H	CH ₃ S	CH ₃	CF ₂ Cl
A788	H	CH ₃ SO	CH ₃	CF ₂ Cl
A789	H	CF ₃	CH ₃	CF ₂ Cl
A790	H	F ₂ CH	CH ₃	CF ₂ Cl
A791	H	HCC	CH ₃	CF ₂ Cl
A792	H	CH ₃ CC	CH ₃	CF ₂ Cl
A793	H	CH ₂ =CH	CH ₃	CF ₂ Cl
A794	H	CH ₂ =CHCH ₂	CH ₃	CF ₂ Cl
A795	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₂ Cl
A796	H	(CH ₃) ₂ N	CH ₃	CF ₂ Cl
A797	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₂ Cl
A798	H	CH ₃ SCH ₂	CH ₃	CF ₂ Cl
A799	H	CH ₃ SOCH ₂	CH ₃	CF ₂ Cl
A800	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₂ Cl
A801	H	CH ₃	CH ₃	CHF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A802	H	CH ₃ CH ₂	CH ₃	CHF ₂
A803	H	cyclopropyl	CH ₃	CHF ₂
A804	H	(CH ₃) ₃ C	CH ₃	CHF ₂
A805	H	(CH ₃) ₂ CH	CH ₃	CHF ₂
A806	H	CH ₃ (CH ₂) ₂	CH ₃	CHF ₂
A807	H	CH ₃ OCH ₂	CH ₃	CHF ₂
A808	H	CH ₃ O(CH ₂) ₂	CH ₃	CHF ₂
A809	H	Ph	CH ₃	CHF ₂
A810	H	PhO	CH ₃	CHF ₂
A811	H	PhS	CH ₃	CHF ₂
A812	H	PhSO	CH ₃	CHF ₂
A813	H	PhSO ₂	CH ₃	CHF ₂
A814	H	CH ₃ S	CH ₃	CHF ₂
A815	H	CH ₃ SO	CH ₃	CHF ₂
A816	H	CF ₃	CH ₃	CHF ₂
A817	H	F ₂ CH	CH ₃	CHF ₂
A818	H	HCC	CH ₃	CHF ₂
A819	H	CH ₃ CC	CH ₃	CHF ₂
A820	H	CH ₂ =CH	CH ₃	CHF ₂
A821	H	CH ₂ =CHCH ₂	CH ₃	CHF ₂
A822	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CHF ₂
A823	H	(CH ₃) ₂ N	CH ₃	CHF ₂
A824	H	(CH ₃) ₂ NSO ₂	CH ₃	CHF ₂
A825	H	CH ₃ SCH ₂	CH ₃	CHF ₂
A826	H	CH ₃ SOCH ₂	CH ₃	CHF ₂
A827	H	CH ₃ SO ₂ CH ₂	CH ₃	CHF ₂
A828	H	CH ₃	CH ₃	CCl ₃
A829	H	CH ₃ CH ₂	CH ₃	CCl ₃
A830	H	cyclopropyl	CH ₃	CCl ₃
A831	H	(CH ₃) ₃ C	CH ₃	CCl ₃
A832	H	(CH ₃) ₂ CH	CH ₃	CCl ₃
A833	H	CH ₃ (CH ₂) ₂	CH ₃	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A834	H	CH ₃ OCH ₂	CH ₃	CCl ₃
A835	H	CH ₃ O(CH ₂) ₂	CH ₃	CCl ₃
A836	H	Ph	CH ₃	CCl ₃
A837	H	PhO	CH ₃	CCl ₃
A838	H	PhS	CH ₃	CCl ₃
A839	H	PhSO	CH ₃	CCl ₃
A840	H	PhSO ₂	CH ₃	CCl ₃
A841	H	CH ₃ S	CH ₃	CCl ₃
A842	H	CH ₃ SO	CH ₃	CCl ₃
A843	H	CF ₃	CH ₃	CCl ₃
A844	H	F ₂ CH	CH ₃	CCl ₃
A845	H	HCC	CH ₃	CCl ₃
A846	H	CH ₃ CC	CH ₃	CCl ₃
A847	H	CH ₂ =CH	CH ₃	CCl ₃
A848	H	CH ₂ =CHCH ₂	CH ₃	CCl ₃
A849	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CCl ₃
A850	H	(CH ₃) ₂ N	CH ₃	CCl ₃
A851	H	(CH ₃) ₂ NSO ₂	CH ₃	CCl ₃
A852	H	CH ₃ SCH ₂	CH ₃	CCl ₃
A853	H	CH ₃ SOCH ₂	CH ₃	CCl ₃
A854	H	CH ₃ SO ₂ CH ₂	CH ₃	CCl ₃
A855	H	CH ₃	Ph	CF ₃
A856	H	CH ₃ CH ₂	Ph	CF ₃
A857	H	(CH ₃) ₂ CH	Ph	CF ₃
A858	H	(CH ₃) ₂ CH	Ph	CF ₃
A859	H	cyclopropyl	Ph	CF ₃
A860	H	CH ₃ (CH ₂) ₂	Ph	CF ₃
A861	H	CH ₃ OCH ₂	Ph	CF ₃
A862	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃
A863	H	Ph	Ph	CF ₃
A864	H	PhO	Ph	CF ₃
A865	H	PhS	Ph	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A866	H	PhSO	Ph	CF ₃
A867	H	PhSO ₂	Ph	CF ₃
A868	H	CH ₃ S	Ph	CF ₃
A869	H	CH ₃ SO	Ph	CF ₃
A870	H	CF ₃	Ph	CF ₃
A871	H	F ₂ CH	Ph	CF ₃
A872	H	HCC	Ph	CF ₃
A873	H	CH ₃ CC	Ph	CF ₃
A874	H	CH ₂ =CH	Ph	CF ₃
A875	H	CH ₂ =CHCH ₂	Ph	CF ₃
A876	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃
A877	H	(CH ₃) ₂ N	Ph	CF ₃
A878	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃
A879	H	CH ₃ SCH ₂	Ph	CF ₃
A880	H	CH ₃ SOCH ₂	Ph	CF ₃
A881	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃
A882	H	CH ₃	Ph	CF ₃ CF ₂
A883	H	CH ₃ CH ₂	Ph	CF ₃ CF ₂
A884	H	cyclopropyl	Ph	CF ₃ CF ₂
A885	H	(CH ₃) ₃ C	Ph	CF ₃ CF ₂
A886	H	(CH ₃) ₂ CH	Ph	CF ₃ CF ₂
A887	H	CH ₃ (CH ₂) ₂	Ph	CF ₃ CF ₂
A888	H	CH ₃ OCH ₂	Ph	CF ₃ CF ₂
A889	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃ CF ₂
A890	H	Ph	Ph	CF ₃ CF ₂
A891	H	PhO	Ph	CF ₃ CF ₂
A892	H	PhS	Ph	CF ₃ CF ₂
A893	H	PhSO	Ph	CF ₃ CF ₂
A894	H	PhSO ₂	Ph	CF ₃ CF ₂
A895	H	CH ₃ S	Ph	CF ₃ CF ₂
A896	H	CH ₃ SO	Ph	CF ₃ CF ₂
A897	H	CF ₃	Ph	CF ₃ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A898	H	F ₂ CH	Ph	CF ₃ CF ₂
A899	H	HCC	Ph	CF ₃ CF ₂
A900	H	CH ₃ CC	Ph	CF ₃ CF ₂
A901	H	CH ₂ =CH	Ph	CF ₃ CF ₂
A902	H	CH ₂ =CHCH ₂	Ph	CF ₃ CF ₂
A903	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃ CF ₂
A904	H	(CH ₃) ₂ N	Ph	CF ₃ CF ₂
A905	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃ CF ₂
A906	H	CH ₃ SCH ₂	Ph	CF ₃ CF ₂
A907	H	CH ₃ SOCH ₂	Ph	CF ₃ CF ₂
A908	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃ CF ₂
A909	H	CH ₃	Ph	CF ₃ CF ₂ CF ₂
A910	H	CH ₃ CH ₂	Ph	CF ₃ CF ₂ CF ₂
A911	H	cyclopropyl	Ph	CF ₃ CF ₂ CF ₂
A912	H	(CH ₃) ₃ C	Ph	CF ₃ CF ₂ CF ₂
A913	H	(CH ₃) ₂ CH	Ph	CF ₃ CF ₂ CF ₂
A914	H	CH ₃ (CH ₂) ₂	Ph	CF ₃ CF ₂ CF ₂
A915	H	CH ₃ OCH ₂	Ph	CF ₃ CF ₂ CF ₂
A916	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃ CF ₂ CF ₂
A917	H	Ph	Ph	CF ₃ CF ₂ CF ₂
A918	H	PhO	Ph	CF ₃ CF ₂ CF ₂
A919	H	PhS	Ph	CF ₃ CF ₂ CF ₂
A920	H	PhSO	Ph	CF ₃ CF ₂ CF ₂
A921	H	PhSO ₂	Ph	CF ₃ CF ₂ CF ₂
A922	H	CH ₃ S	Ph	CF ₃ CF ₂ CF ₂
A923	H	CH ₃ SO	Ph	CF ₃ CF ₂ CF ₂
A924	H	CF ₃	Ph	CF ₃ CF ₂ CF ₂
A925	H	F ₂ CH	Ph	CF ₃ CF ₂ CF ₂
A926	H	HCC	Ph	CF ₃ CF ₂ CF ₂
A927	H	CH ₃ CC	Ph	CF ₃ CF ₂ CF ₂
A928	H	CH ₂ =CH	Ph	CF ₃ CF ₂ CF ₂
A929	H	CH ₂ =CHCH ₂	Ph	CF ₃ CF ₂ CF ₂

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A930	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃ CF ₂ CF ₂
A931	H	(CH ₃) ₂ N	Ph	CF ₃ CF ₂ CF ₂
A932	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃ CF ₂ CF ₂
A933	H	CH ₃ SCH ₂	Ph	CF ₃ CF ₂ CF ₂
A934	H	CH ₃ SOCH ₂	Ph	CF ₃ CF ₂ CF ₂
A935	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃ CF ₂ CF ₂
A936	H	CH ₃	Ph	CF ₂ Cl
A937	H	CH ₃ CH ₂	Ph	CF ₂ Cl
A938	H	cyclopropyl	Ph	CF ₂ Cl
A939	H	(CH ₃) ₃ C	Ph	CF ₂ Cl
A940	H	(CH ₃) ₂ CH	Ph	CF ₂ Cl
A941	H	CH ₃ (CH ₂) ₂	Ph	CF ₂ Cl
A942	H	CH ₃ OCH ₂	Ph	CF ₂ Cl
A943	H	CH ₃ O(CH ₂) ₂	Ph	CF ₂ Cl
A944	H	Ph	Ph	CF ₂ Cl
A945	H	PhO	Ph	CF ₂ Cl
A946	H	PhS	Ph	CF ₂ Cl
A947	H	PhSO	Ph	CF ₂ Cl
A948	H	PhSO ₂	Ph	CF ₂ Cl
A949	H	CH ₃ S	Ph	CF ₂ Cl
A950	H	CH ₃ SO	Ph	CF ₂ Cl
A951	H	CF ₃	Ph	CF ₂ Cl
A952	H	F ₂ CH	Ph	CF ₂ Cl
A953	H	HCC	Ph	CF ₂ Cl
A954	H	CH ₃ CC	Ph	CF ₂ Cl
A955	H	CH ₂ =CH	Ph	CF ₂ Cl
A956	H	CH ₂ =CHCH ₂	Ph	CF ₂ Cl
A957	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₂ Cl
A958	H	(CH ₃) ₂ N	Ph	CF ₂ Cl
A959	H	(CH ₃) ₂ NSO ₂	Ph	CF ₂ Cl
A960	H	CH ₃ SCH ₂	Ph	CF ₂ Cl
A961	H	CH ₃ SOCH ₂	Ph	CF ₂ Cl

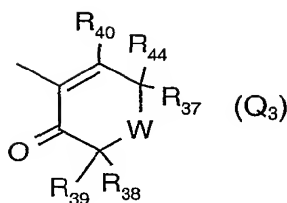
Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A962	H	CH ₃ SO ₂ CH ₂	Ph	CF ₂ Cl
A963	H	CH ₃	Ph	CHF ₂
A964	H	CH ₃ CH ₂	Ph	CHF ₂
A965	H	(CH ₃) ₃ C	Ph	CHF ₂
A966	H	(CH ₃) ₂ CH	Ph	CHF ₂
A967	H	cyclopropyl	Ph	CHF ₂
A968	H	CH ₃ (CH ₂) ₂	Ph	CHF ₂
A969	H	CH ₃ OCH ₂	Ph	CHF ₂
A970	H	CH ₃ O(CH ₂) ₂	Ph	CHF ₂
A971	H	Ph	Ph	CHF ₂
A972	H	PhO	Ph	CHF ₂
A973	H	PhS	Ph	CHF ₂
A974	H	PhSO	Ph	CHF ₂
A975	H	PhSO ₂	Ph	CHF ₂
A976	H	CH ₃ S	Ph	CHF ₂
A977	H	CH ₃ SO	Ph	CHF ₂
A978	H	CF ₃	Ph	CHF ₂
A979	H	F ₂ CH	Ph	CHF ₂
A980	H	HCC	Ph	CHF ₂
A981	H	CH ₃ CC	Ph	CHF ₂
A982	H	CH ₂ =CH	Ph	CHF ₂
A983	H	CH ₂ =CHCH ₂	Ph	CHF ₂
A984	H	CH ₃ SO ₂ N(CH ₃)	Ph	CHF ₂
A985	H	(CH ₃) ₂ N	Ph	CHF ₂
A986	H	(CH ₃) ₂ NSO ₂	Ph	CHF ₂
A987	H	CH ₃ SCH ₂	Ph	CHF ₂
A988	H	CH ₃ SOCH ₂	Ph	CHF ₂
A989	H	CH ₃ SO ₂ CH ₂	Ph	CHF ₂
A990	H	CH ₃	Ph	CCl ₃
A991	H	CH ₃ CH ₂	Ph	CCl ₃
A992	H	(CH ₃) ₃ C	Ph	CCl ₃
A993	H	(CH ₃) ₂ CH	Ph	CCl ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A994	H	cyclopropyl	Ph	CCl ₃
A995	H	CH ₃ (CH ₂) ₂	Ph	CCl ₃
A996	H	CH ₃ OCH ₂	Ph	CCl ₃
A997	H	CH ₃ O(CH ₂) ₂	Ph	CCl ₃
A998	H	Ph	Ph	CCl ₃
A999	H	PhO	Ph	CCl ₃
A1000	H	PhS	Ph	CCl ₃
A1001	H	PhSO	Ph	CCl ₃
A1002	H	PhSO ₂	Ph	CCl ₃
A1003	H	CH ₃ S	Ph	CCl ₃
A1004	H	CH ₃ SO	Ph	CCl ₃
A1005	H	CF ₃	Ph	CCl ₃
A1006	H	F ₂ CH	Ph	CCl ₃
A1007	H	HCC	Ph	CCl ₃
A1008	H	CH ₃ CC	Ph	CCl ₃
A1009	H	CH ₂ =CH	Ph	CCl ₃
A1010	H	CH ₂ =CHCH ₂	Ph	CCl ₃
A1011	H	CH ₃ SO ₂ N(CH ₃)	Ph	CCl ₃
A1012	H	(CH ₃) ₂ N	Ph	CCl ₃
A1013	H	(CH ₃) ₂ NSO ₂	Ph	CCl ₃
A1014	H	CH ₃ SCH ₂	Ph	CCl ₃
A1015	H	CH ₃ SOCH ₂	Ph	CCl ₃
A1016	H	CH ₃ SO ₂ CH ₂	Ph	CCl ₃
A1017	F	H	H	CF ₃
A1018	Cl	H	H	CF ₃
A1019	Br	H	H	CF ₃
A1020	CN	H	H	CF ₃
A1021	CH ₃ SO ₂ O	H	H	CF ₃
A1022	CH ₃ O	H	H	CF ₃
A1023	CH ₂ CH ₃ O	H	H	CF ₃
A1024	CH ₂ CH=CH ₂ O	H	H	CF ₃
A1025	HCCCH ₂ O	H	H	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A1026	S-benzyl	H	H	CF ₃
A1027	SO ₂ -benzyl	H	H	CF ₃
A1028	ClCH ₂	H	H	CF ₃
A1029	BrCH ₂	H	H	CF ₃
A1030	FCH ₂	H	H	CF ₃
A1031	CHF ₂ CH ₂	H	H	CF ₃
A1032	CF ₃ CH ₂	H	H	CF ₃
A1033	triazolylmethyl	H	H	CF ₃
A1034	CHCl ₂ CH ₂	H	H	CF ₃
A1035	ClCH=CH	H	H	CF ₃
A1036	Cl ₂ C=CH	H	H	CF ₃
A1037	CF ₃ CH=CH	H	H	CF ₃
A1038	CICC	H	H	CF ₃
A1039	Ph	H	H	CF ₃
A1040	CH ₃	CH ₃	H	CF ₃
A1041	CH ₃	OH	H	CF ₃
A1042	CH ₃	F	H	CF ₃
A1043	CH ₃	Cl	H	CF ₃
A1044	F	CH ₃	H	CF ₃
A1045	Cl	CH ₃	H	CF ₃
A1046	H	F	H	CF ₃
A1047	H	Cl	H	CF ₃
A1048	H	Br	H	CF ₃
A1049	H	OH	H	CF ₃
A1050	H	OCH ₃	H	CF ₃
A1051	H	OCHF ₂	H	CF ₃
A1052	H	OSO ₂ CH ₃	H	CF ₃
A1053	H	OSO ₂ CF ₃	H	CF ₃
A1054	H	ClCH ₂	H	CF ₃
A1055	H	BrCH ₂	H	CF ₃
A1056	H	FCH ₂	H	CF ₃
A1057	H	CHF ₂ CH ₂	H	CF ₃

Compd. no.	R ₇₉	R ₈₀	R ₈₁	R ₈₂
A1058	H	CF ₃ CH ₂	H	CF ₃
A1059	H	triazolylmethyl	H	CF ₃
A1060	H	CHCl ₂ CH ₂	H	CF ₃
A1061	H	ClCH=CH	H	CF ₃
A1062	H	Cl ₂ C=CH	H	CF ₃
A1063	H	CF ₃ CH=CH	H	CF ₃
A1064	H	ClCC	H	CF ₃
A1065	H	CH ₃ C(O)	H	CF ₃
A1066	H	phenyl	H	CF ₃
A1067	H	SO ₂ CH ₃	H	CF ₃
A1068	H	SO ₂ CF ₃	H	CF ₃
A1069	H	CN	H	CF ₃
A1070	H	NO ₂	H	CF ₃
A1071	CH ₃	H	F	CF ₃
A1072	CH ₃	H	Cl	CF ₃
A1073	CH ₃	H	Br	CF ₃
A1074	CH ₃	H	CN	CF ₃
A1075	CH ₃	H	CH ₃ O	CF ₃
A1076	CH ₃	H	CH ₃ S	CF ₃
A1077	CH ₃	H	CH ₃ SO	CF ₃
A1078	CH ₃	H	CH ₃ SO ₂	CF ₃

In the following Table 6 Q is Q₃



and Q₃ represents the following radicals B:

Table 6: Radicals B:

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Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B1	H	H	H	H	OH	CH ₂
B2	CH ₃	H	H	H	OH	CH ₂
B3	CH ₃ CH ₂	H	H	H	OH	CH ₂
B4	CH ₃ CH ₂ CH ₂	H	H	H	OH	CH ₂
B5	(CH ₃) ₂ CH	H	H	H	OH	CH ₂
B6	(CH ₃) ₃ C	H	H	H	OH	CH ₂
B7	CH ₃ S	H	H	H	OH	CH ₂
B8	CH ₃ SO	H	H	H	OH	CH ₂
B9	CH ₃ SO ₂	H	H	H	OH	CH ₂
B10	Ph	H	H	H	OH	CH ₂
B11	CH ₃ O	H	H	H	OH	CH ₂
B12	CH ₃ CO ₂	H	H	H	OH	CH ₂
B13	CH ₃ CH ₂ CO ₂	H	H	H	OH	CH ₂
B14	CH ₂ =CHCH ₂	H	H	H	OH	CH ₂
B15	HCCCH ₂	H	H	H	OH	CH ₂
B16	CF ₃	H	H	H	OH	CH ₂
B17	(CH ₃) ₂ NSO ₂	H	H	H	OH	CH ₂
B18	(CH ₃) ₂ N	H	H	H	OH	CH ₂
B19	PhO	H	H	H	OH	CH ₂
B20	PhS	H	H	H	OH	CH ₂
B21	PhSO	H	H	H	OH	CH ₂
B22	PhSO ₂	H	H	H	OH	CH ₂
B23	CN	H	H	H	OH	CH ₂
B24	CH ₃	CH ₃	H	H	OH	CH ₂
B25	CH ₃ CH ₂	CH ₃	H	H	OH	CH ₂
B26	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	CH ₂
B27	(CH ₃) ₂ CH	CH ₃	H	H	OH	CH ₂
B28	(CH ₃) ₃ C	CH ₃	H	H	OH	CH ₂
B29	CH ₃ S	CH ₃	H	H	OH	CH ₂
B30	CH ₃ SO	CH ₃	H	H	OH	CH ₂
B31	CH ₃ SO ₂	CH ₃	H	H	OH	CH ₂
B32	Ph	CH ₃	H	H	OH	CH ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B33	CH ₃ O	CH ₃	H	H	OH	CH ₂
B34	CH ₃ CO ₂	CH ₃	H	H	OH	CH ₂
B35	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	CH ₂
B36	CH ₂ =CHCH ₂	CH ₃	H	H	OH	CH ₂
B37	HCCCH ₂	CH ₃	H	H	OH	CH ₂
B38	CF ₃	CH ₃	H	H	OH	CH ₂
B39	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	CH ₂
B40	(CH ₃) ₂ N	CH ₃	H	H	OH	CH ₂
B41	PhO	CH ₃	H	H	OH	CH ₂
B42	PhS	CH ₃	H	H	OH	CH ₂
B43	PhSO	CH ₃	H	H	OH	CH ₂
B44	PhSO ₂	CH ₃	H	H	OH	CH ₂
B45	CN	CH ₃	H	H	OH	CH ₂
B46	CH ₃	H	CH ₃	H	OH	CH ₂
B47	CH ₃ CH ₂	H	CH ₃	H	OH	CH ₂
B48	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	CH ₂
B49	(CH ₃) ₂ CH	H	CH ₃	H	OH	CH ₂
B50	(CH ₃) ₃ C	H	CH ₃	H	OH	CH ₂
B51	CH ₃ S	H	CH ₃	H	OH	CH ₂
B52	CH ₃ SO	H	CH ₃	H	OH	CH ₂
B53	CH ₃ SO ₂	H	CH ₃	H	OH	CH ₂
B54	Ph	H	CH ₃	H	OH	CH ₂
B55	CH ₃ O	H	CH ₃	H	OH	CH ₂
B56	CH ₃ CO ₂	H	CH ₃	H	OH	CH ₂
B57	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	CH ₂
B58	CH ₂ =CHCH ₂	H	CH ₃	H	OH	CH ₂
B59	HCCCH ₂	H	CH ₃	H	OH	CH ₂
B60	CF ₃	H	CH ₃	H	OH	CH ₂
B61	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	CH ₂
B62	(CH ₃) ₂ N	H	CH ₃	H	OH	CH ₂
B63	PhO	H	CH ₃	H	OH	CH ₂
B64	PhS	H	CH ₃	H	OH	CH ₂
B65	PhSO	H	CH ₃	H	OH	CH ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B66	PhSO ₂	H	CH ₃	H	OH	CH ₂
B67	CN	H	CH ₃	H	OH	CH ₂
B68	CH ₃	CH ₃	CH ₃	H	OH	CH ₂
B69	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	CH ₂
B70	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	CH ₂
B71	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	CH ₂
B72	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	CH ₂
B73	CH ₃ S	CH ₃	CH ₃	H	OH	CH ₂
B74	CH ₃ SO	CH ₃	CH ₃	H	OH	CH ₂
B75	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	CH ₂
B76	Ph	CH ₃	CH ₃	H	OH	CH ₂
B77	CH ₃ O	CH ₃	CH ₃	H	OH	CH ₂
B78	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	CH ₂
B79	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	CH ₂
B80	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	CH ₂
B81	HCCCH ₂	CH ₃	CH ₃	H	OH	CH ₂
B82	CF ₃	CH ₃	CH ₃	H	OH	CH ₂
B83	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	CH ₂
B84	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	CH ₂
B85	PhO	CH ₃	CH ₃	H	OH	CH ₂
B86	PhS	CH ₃	CH ₃	H	OH	CH ₂
B87	PhSO	CH ₃	CH ₃	H	OH	CH ₂
B88	PhSO ₂	CH ₃	CH ₃	H	OH	CH ₂
B89	CN	CH ₃	CH ₃	H	OH	CH ₂
B90	CH ₃	CH ₃	CH ₃	CH ₃	OH	CH ₂
B91	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B92	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B93	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	CH ₂
B94	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	CH ₂
B95	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	CH ₂
B96	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	CH ₂
B97	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B98	Ph	CH ₃	CH ₃	CH ₃	OH	CH ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B99	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	CH ₂
B100	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B101	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B102	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B103	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B104	CF ₃	CH ₃	CH ₃	CH ₃	OH	CH ₂
B105	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B106	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	CH ₂
B107	PhO	CH ₃	CH ₃	CH ₃	OH	CH ₂
B108	PhS	CH ₃	CH ₃	CH ₃	OH	CH ₂
B109	PhSO	CH ₃	CH ₃	CH ₃	OH	CH ₂
B110	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	CH ₂
B111	CN	CH ₃	CH ₃	CH ₃	OH	CH ₂
B112	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B113	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B114	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	CH ₂
B115	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	CH ₂
B116	CH ₃ S	CH ₃ CH ₂	H	H	OH	CH ₂
B117	CH ₃ SO	CH ₃ CH ₂	H	H	OH	CH ₂
B118	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B119	Ph	CH ₃ CH ₂	H	H	OH	CH ₂
B120	CH ₃ O	CH ₃ CH ₂	H	H	OH	CH ₂
B121	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B122	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B123	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B124	HCCCH ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B125	CF ₃	CH ₃ CH ₂	H	H	OH	CH ₂
B126	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	CH ₂
B127	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	CH ₂
B128	PhO	CH ₃ CH ₂	H	H	OH	CH ₂
B129	PhS	CH ₃ CH ₂	H	H	OH	CH ₂
B130	PhSO	CH ₃ CH ₂	H	H	OH	CH ₂
B131	PhSO ₂	CH ₃ CH ₂	H	H	OH	CH ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B132	CN	CH ₃ CH ₂	H	H	OH	CH ₂
B133	H	H	H	H	OH	CHCH ₃
B134	CH ₃	H	H	H	OH	CHCH ₃
B135	CH ₃ CH ₂	H	H	H	OH	CHCH ₃
B136	CH ₃ CH ₂ CH ₂	H	H	H	OH	CHCH ₃
B137	(CH ₃) ₂ CH	H	H	H	OH	CHCH ₃
B138	(CH ₃) ₃ C	H	H	H	OH	CHCH ₃
B139	CH ₃ S	H	H	H	OH	CHCH ₃
B140	CH ₃ SO	H	H	H	OH	CHCH ₃
B141	CH ₃ SO ₂	H	H	H	OH	CHCH ₃
B142	Ph	H	H	H	OH	CHCH ₃
B143	CH ₃ O	H	H	H	OH	CHCH ₃
B144	CH ₃ CO ₂	H	H	H	OH	CHCH ₃
B145	CH ₃ CH ₂ CO ₂	H	H	H	OH	CHCH ₃
B146	CH ₂ =CHCH ₂	H	H	H	OH	CHCH ₃
B147	HCCCH ₂	H	H	H	OH	CHCH ₃
B148	CF ₃	H	H	H	OH	CHCH ₃
B149	(CH ₃) ₂ NSO ₂	H	H	H	OH	CHCH ₃
B150	(CH ₃) ₂ N	H	H	H	OH	CHCH ₃
B151	PhO	H	H	H	OH	CHCH ₃
B152	PhS	H	H	H	OH	CHCH ₃
B153	PhSO	H	H	H	OH	CHCH ₃
B154	PhSO ₂	H	H	H	OH	CHCH ₃
B155	CN	H	H	H	OH	CHCH ₃
B156	CH ₃	CH ₃	H	H	OH	CHCH ₃
B157	CH ₃ CH ₂	CH ₃	H	H	OH	CHCH ₃
B158	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	CHCH ₃
B159	(CH ₃) ₂ CH	CH ₃	H	H	OH	CHCH ₃
B160	(CH ₃) ₃ C	CH ₃	H	H	OH	CHCH ₃
B161	CH ₃ S	CH ₃	H	H	OH	CHCH ₃
B162	CH ₃ SO	CH ₃	H	H	OH	CHCH ₃
B163	CH ₃ SO ₂	CH ₃	H	H	OH	CHCH ₃
B164	Ph	CH ₃	H	H	OH	CHCH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B165	CH ₃ O	CH ₃	H	H	OH	CHCH ₃
B166	CH ₃ CO ₂	CH ₃	H	H	OH	CHCH ₃
B167	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	CHCH ₃
B168	CH ₂ =CHCH ₂	CH ₃	H	H	OH	CHCH ₃
B169	HCCCH ₂	CH ₃	H	H	OH	CHCH ₃
B170	CF ₃	CH ₃	H	H	OH	CHCH ₃
B171	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	CHCH ₃
B172	(CH ₃) ₂ N	CH ₃	H	H	OH	CHCH ₃
B173	PhO	CH ₃	H	H	OH	CHCH ₃
B174	PhS	CH ₃	H	H	OH	CHCH ₃
B175	PhSO	CH ₃	H	H	OH	CHCH ₃
B176	PhSO ₂	CH ₃	H	H	OH	CHCH ₃
B177	CN	CH ₃	H	H	OH	CHCH ₃
B178	CH ₃	H	CH ₃	H	OH	CHCH ₃
B179	CH ₃ CH ₂	H	CH ₃	H	OH	CHCH ₃
B180	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	CHCH ₃
B181	(CH ₃) ₂ CH	H	CH ₃	H	OH	CHCH ₃
B182	(CH ₃) ₃ C	H	CH ₃	H	OH	CHCH ₃
B183	CH ₃ S	H	CH ₃	H	OH	CHCH ₃
B184	CH ₃ SO	H	CH ₃	H	OH	CHCH ₃
B185	CH ₃ SO ₂	H	CH ₃	H	OH	CHCH ₃
B186	Ph	H	CH ₃	H	OH	CHCH ₃
B187	CH ₃ O	H	CH ₃	H	OH	CHCH ₃
B188	CH ₃ CO ₂	H	CH ₃	H	OH	CHCH ₃
B189	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	CHCH ₃
B190	CH ₂ =CHCH ₂	H	CH ₃	H	OH	CHCH ₃
B191	HCCCH ₂	H	CH ₃	H	OH	CHCH ₃
B192	CF ₃	H	CH ₃	H	OH	CHCH ₃
B193	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	CHCH ₃
B194	(CH ₃) ₂ N	H	CH ₃	H	OH	CHCH ₃
B195	PhO	H	CH ₃	H	OH	CHCH ₃
B196	PhS	H	CH ₃	H	OH	CHCH ₃
B197	PhSO	H	CH ₃	H	OH	CHCH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B198	PhSO ₂	H	CH ₃	H	OH	CHCH ₃
B199	CN	H	CH ₃	H	OH	CHCH ₃
B200	CH ₃	CH ₃	CH ₃	H	OH	CHCH ₃
B201	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B202	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B203	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	CHCH ₃
B204	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	CHCH ₃
B205	CH ₃ S	CH ₃	CH ₃	H	OH	CHCH ₃
B206	CH ₃ SO	CH ₃	CH ₃	H	OH	CHCH ₃
B207	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B208	Ph	CH ₃	CH ₃	H	OH	CHCH ₃
B209	CH ₃ O	CH ₃	CH ₃	H	OH	CHCH ₃
B210	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B211	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B212	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B213	HCCCH ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B214	CF ₃	CH ₃	CH ₃	H	OH	CHCH ₃
B215	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B216	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	CHCH ₃
B217	PhO	CH ₃	CH ₃	H	OH	CHCH ₃
B218	PhS	CH ₃	CH ₃	H	OH	CHCH ₃
B219	PhSO	CH ₃	CH ₃	H	OH	CHCH ₃
B220	PhSO ₂	CH ₃	CH ₃	H	OH	CHCH ₃
B221	CN	CH ₃	CH ₃	H	OH	CHCH ₃
B222	CH ₃	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B223	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B224	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B225	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B226	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B227	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B228	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B229	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B230	Ph	CH ₃	CH ₃	CH ₃	OH	CHCH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B231	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B232	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B233	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B234	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B235	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B236	CF ₃	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B237	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B238	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B239	PhO	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B240	PhS	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B241	PhSO	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B242	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B243	CN	CH ₃	CH ₃	CH ₃	OH	CHCH ₃
B244	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B245	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B246	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	CHCH ₃
B247	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	CHCH ₃
B248	CH ₃ S	CH ₃ CH ₂	H	H	OH	CHCH ₃
B249	CH ₃ SO	CH ₃ CH ₂	H	H	OH	CHCH ₃
B250	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B251	Ph	CH ₃ CH ₂	H	H	OH	CHCH ₃
B252	CH ₃ O	CH ₃ CH ₂	H	H	OH	CHCH ₃
B253	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B254	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B255	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B256	HCCCH ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B257	CF ₃	CH ₃ CH ₂	H	H	OH	CHCH ₃
B258	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃
B259	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	CHCH ₃
B260	PhO	CH ₃ CH ₂	H	H	OH	CHCH ₃
B261	PhS	CH ₃ CH ₂	H	H	OH	CHCH ₃
B262	PhSO	CH ₃ CH ₂	H	H	OH	CHCH ₃
B263	PhSO ₂	CH ₃ CH ₂	H	H	OH	CHCH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B264	CN	CH ₃ CH ₂	H	H	OH	CHCH ₃
B265	H	H	H	H	OH	C=O
B266	CH ₃	H	H	H	OH	C=O
B267	CH ₃ CH ₂	H	H	H	OH	C=O
B268	CH ₃ CH ₂ CH ₂	H	H	H	OH	C=O
B269	(CH ₃) ₂ CH	H	H	H	OH	C=O
B270	(CH ₃) ₃ C	H	H	H	OH	C=O
B271	CH ₃ S	H	H	H	OH	C=O
B272	CH ₃ SO	H	H	H	OH	C=O
B273	CH ₃ SO ₂	H	H	H	OH	C=O
B274	Ph	H	H	H	OH	C=O
B275	CH ₃ O	H	H	H	OH	C=O
B276	CH ₃ CO ₂	H	H	H	OH	C=O
B277	CH ₃ CH ₂ CO ₂	H	H	H	OH	C=O
B278	CH ₂ =CHCH ₂	H	H	H	OH	C=O
B279	HCCCH ₂	H	H	H	OH	C=O
B280	CF ₃	H	H	H	OH	C=O
B281	(CH ₃) ₂ NSO ₂	H	H	H	OH	C=O
B282	(CH ₃) ₂ N	H	H	H	OH	C=O
B283	PhO	H	H	H	OH	C=O
B284	PhS	H	H	H	OH	C=O
B285	PhSO	H	H	H	OH	C=O
B286	PhSO ₂	H	H	H	OH	C=O
B287	CN	H	H	H	OH	C=O
B288	CH ₃	CH ₃	H	H	OH	C=O
B289	CH ₃ CH ₂	CH ₃	H	H	OH	C=O
B290	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	C=O
B291	(CH ₃) ₂ CH	CH ₃	H	H	OH	C=O
B292	(CH ₃) ₃ C	CH ₃	H	H	OH	C=O
B293	CH ₃ S	CH ₃	H	H	OH	C=O
B294	CH ₃ SO	CH ₃	H	H	OH	C=O
B295	CH ₃ SO ₂	CH ₃	H	H	OH	C=O
B296	Ph	CH ₃	H	H	OH	C=O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B297	CH ₃ O	CH ₃	H	H	OH	C=O
B298	CH ₃ CO ₂	CH ₃	H	H	OH	C=O
B299	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	C=O
B300	CH ₂ =CHCH ₂	CH ₃	H	H	OH	C=O
B301	HCCCH ₂	CH ₃	H	H	OH	C=O
B302	CF ₃	CH ₃	H	H	OH	C=O
B303	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	C=O
B304	(CH ₃) ₂ N	CH ₃	H	H	OH	C=O
B305	PhO	CH ₃	H	H	OH	C=O
B306	PhS	CH ₃	H	H	OH	C=O
B307	PhSO	CH ₃	H	H	OH	C=O
B308	PhSO ₂	CH ₃	H	H	OH	C=O
B309	CN	CH ₃	H	H	OH	C=O
B310	CH ₃	H	CH ₃	H	OH	C=O
B311	CH ₃ CH ₂	H	CH ₃	H	OH	C=O
B312	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	C=O
B313	(CH ₃) ₂ CH	H	CH ₃	H	OH	C=O
B314	(CH ₃) ₃ C	H	CH ₃	H	OH	C=O
B315	CH ₃ S	H	CH ₃	H	OH	C=O
B316	CH ₃ SO	H	CH ₃	H	OH	C=O
B317	CH ₃ SO ₂	H	CH ₃	H	OH	C=O
B318	Ph	H	CH ₃	H	OH	C=O
B319	CH ₃ O	H	CH ₃	H	OH	C=O
B320	CH ₃ CO ₂	H	CH ₃	H	OH	C=O
B321	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	C=O
B322	CH ₂ =CHCH ₂	H	CH ₃	H	OH	C=O
B323	HCCCH ₂	H	CH ₃	H	OH	C=O
B324	CF ₃	H	CH ₃	H	OH	C=O
B325	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	C=O
B326	(CH ₃) ₂ N	H	CH ₃	H	OH	C=O
B327	PhO	H	CH ₃	H	OH	C=O
B328	PhS	H	CH ₃	H	OH	C=O
B329	PhSO	H	CH ₃	H	OH	C=O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B330	PhSO ₂	H	CH ₃	H	OH	C=O
B331	CN	H	CH ₃	H	OH	C=O
B332	CH ₃	CH ₃	CH ₃	H	OH	C=O
B333	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	C=O
B334	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	C=O
B335	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	C=O
B336	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	C=O
B337	CH ₃ S	CH ₃	CH ₃	H	OH	C=O
B338	CH ₃ SO	CH ₃	CH ₃	H	OH	C=O
B339	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	C=O
B340	Ph	CH ₃	CH ₃	H	OH	C=O
B341	CH ₃ O	CH ₃	CH ₃	H	OH	C=O
B342	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	C=O
B343	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	C=O
B344	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	C=O
B345	HCCCH ₂	CH ₃	CH ₃	H	OH	C=O
B346	CF ₃	CH ₃	CH ₃	H	OH	C=O
B347	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	C=O
B348	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	C=O
B349	PhO	CH ₃	CH ₃	H	OH	C=O
B350	PhS	CH ₃	CH ₃	H	OH	C=O
B351	PhSO	CH ₃	CH ₃	H	OH	C=O
B352	PhSO ₂	CH ₃	CH ₃	H	OH	C=O
B353	CN	CH ₃	CH ₃	H	OH	C=O
B354	CH ₃	CH ₃	CH ₃	CH ₃	OH	C=O
B355	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B356	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B357	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	C=O
B358	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	C=O
B359	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	C=O
B360	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	C=O
B361	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B362	Ph	CH ₃	CH ₃	CH ₃	OH	C=O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B363	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	C=O
B364	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B365	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B366	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B367	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B368	CF ₃	CH ₃	CH ₃	CH ₃	OH	C=O
B369	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B370	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	C=O
B371	PhO	CH ₃	CH ₃	CH ₃	OH	C=O
B372	PhS	CH ₃	CH ₃	CH ₃	OH	C=O
B373	PhSO	CH ₃	CH ₃	CH ₃	OH	C=O
B374	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	C=O
B375	CN	CH ₃	CH ₃	CH ₃	OH	C=O
B376	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	C=O
B377	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	C=O
B378	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	C=O
B379	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	C=O
B380	CH ₃ S	CH ₃ CH ₂	H	H	OH	C=O
B381	CH ₃ SO	CH ₃ CH ₂	H	H	OH	C=O
B382	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	C=O
B383	Ph	CH ₃ CH ₂	H	H	OH	C=O
B384	CH ₃ O	CH ₃ CH ₂	H	H	OH	C=O
B385	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	C=O
B386	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	C=O
B387	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	C=O
B388	HCCCH ₂	CH ₃ CH ₂	H	H	OH	C=O
B389	CF ₃	CH ₃ CH ₂	H	H	OH	C=O
B390	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	C=O
B391	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	C=O
B392	PhO	CH ₃ CH ₂	H	H	OH	C=O
B393	PhS	CH ₃ CH ₂	H	H	OH	C=O
B394	PhSO	CH ₃ CH ₂	H	H	OH	C=O
B395	PhSO ₂	CH ₃ CH ₂	H	H	OH	C=O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B396	CN	CH ₃ CH ₂	H	H	OH	C=O
B397	H	H	H	H	OH	N-CH ₃
B398	CH ₃	H	H	H	OH	N-CH ₃
B399	CH ₃ CH ₂	H	H	H	OH	N-CH ₃
B400	CH ₃ CH ₂ CH ₂	H	H	H	OH	N-CH ₃
B401	(CH ₃) ₂ CH	H	H	H	OH	N-CH ₃
B402	(CH ₃) ₃ C	H	H	H	OH	N-CH ₃
B403	CH ₃ S	H	H	H	OH	N-CH ₃
B404	CH ₃ SO	H	H	H	OH	N-CH ₃
B405	CH ₃ SO ₂	H	H	H	OH	N-CH ₃
B406	Ph	H	H	H	OH	N-CH ₃
B407	CH ₃ O	H	H	H	OH	N-CH ₃
B408	CH ₃ CO ₂	H	H	H	OH	N-CH ₃
B409	CH ₃ CH ₂ CO ₂	H	H	H	OH	N-CH ₃
B410	CH ₂ =CHCH ₂	H	H	H	OH	N-CH ₃
B411	HCCCH ₂	H	H	H	OH	N-CH ₃
B412	CF ₃	H	H	H	OH	N-CH ₃
B413	(CH ₃) ₂ NSO ₂	H	H	H	OH	N-CH ₃
B414	(CH ₃) ₂ N	H	H	H	OH	N-CH ₃
B415	PhO	H	H	H	OH	N-CH ₃
B416	PhS	H	H	H	OH	N-CH ₃
B417	PhSO	H	H	H	OH	N-CH ₃
B418	PhSO ₂	H	H	H	OH	N-CH ₃
B419	CN	H	H	H	OH	N-CH ₃
B420	CH ₃	CH ₃	H	H	OH	N-CH ₃
B421	CH ₃ CH ₂	CH ₃	H	H	OH	N-CH ₃
B422	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	N-CH ₃
B423	(CH ₃) ₂ CH	CH ₃	H	H	OH	N-CH ₃
B424	(CH ₃) ₃ C	CH ₃	H	H	OH	N-CH ₃
B425	CH ₃ S	CH ₃	H	H	OH	N-CH ₃
B426	CH ₃ SO	CH ₃	H	H	OH	N-CH ₃
B427	CH ₃ SO ₂	CH ₃	H	H	OH	N-CH ₃
B428	Ph	CH ₃	H	H	OH	N-CH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B429	CH ₃ O	CH ₃	H	H	OH	N-CH ₃
B430	CH ₃ CO ₂	CH ₃	H	H	OH	N-CH ₃
B431	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	N-CH ₃
B432	CH ₂ =CHCH ₂	CH ₃	H	H	OH	N-CH ₃
B433	HCCCH ₂	CH ₃	H	H	OH	N-CH ₃
B434	CF ₃	CH ₃	H	H	OH	N-CH ₃
B435	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	N-CH ₃
B436	(CH ₃) ₂ N	CH ₃	H	H	OH	N-CH ₃
B437	PhO	CH ₃	H	H	OH	N-CH ₃
B438	PhS	CH ₃	H	H	OH	N-CH ₃
B439	PhSO	CH ₃	H	H	OH	N-CH ₃
B440	PhSO ₂	CH ₃	H	H	OH	N-CH ₃
B441	CN	CH ₃	H	H	OH	N-CH ₃
B442	CH ₃	H	CH ₃	H	OH	N-CH ₃
B443	CH ₃ CH ₂	H	CH ₃	H	OH	N-CH ₃
B444	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	N-CH ₃
B445	(CH ₃) ₂ CH	H	CH ₃	H	OH	N-CH ₃
B446	(CH ₃) ₃ C	H	CH ₃	H	OH	N-CH ₃
B447	CH ₃ S	H	CH ₃	H	OH	N-CH ₃
B448	CH ₃ SO	H	CH ₃	H	OH	N-CH ₃
B449	CH ₃ SO ₂	H	CH ₃	H	OH	N-CH ₃
B450	Ph	H	CH ₃	H	OH	N-CH ₃
B451	CH ₃ O	H	CH ₃	H	OH	N-CH ₃
B452	CH ₃ CO ₂	H	CH ₃	H	OH	N-CH ₃
B453	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	N-CH ₃
B454	CH ₂ =CHCH ₂	H	CH ₃	H	OH	N-CH ₃
B455	HCCCH ₂	H	CH ₃	H	OH	N-CH ₃
B456	CF ₃	H	CH ₃	H	OH	N-CH ₃
B457	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	N-CH ₃
B458	(CH ₃) ₂ N	H	CH ₃	H	OH	N-CH ₃
B459	PhO	H	CH ₃	H	OH	N-CH ₃
B460	PhS	H	CH ₃	H	OH	N-CH ₃
B461	PhSO	H	CH ₃	H	OH	N-CH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B462	PhSO ₂	H	CH ₃	H	OH	N-CH ₃
B463	CN	H	CH ₃	H	OH	N-CH ₃
B464	CH ₃	CH ₃	CH ₃	H	OH	N-CH ₃
B465	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B466	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B467	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	N-CH ₃
B468	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	N-CH ₃
B469	CH ₃ S	CH ₃	CH ₃	H	OH	N-CH ₃
B470	CH ₃ SO	CH ₃	CH ₃	H	OH	N-CH ₃
B471	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B472	Ph	CH ₃	CH ₃	H	OH	N-CH ₃
B473	CH ₃ O	CH ₃	CH ₃	H	OH	N-CH ₃
B474	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B475	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B476	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B477	HCCCH ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B478	CF ₃	CH ₃	CH ₃	H	OH	N-CH ₃
B479	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B480	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	N-CH ₃
B481	PhO	CH ₃	CH ₃	H	OH	N-CH ₃
B482	PhS	CH ₃	CH ₃	H	OH	N-CH ₃
B483	PhSO	CH ₃	CH ₃	H	OH	N-CH ₃
B484	PhSO ₂	CH ₃	CH ₃	H	OH	N-CH ₃
B485	CN	CH ₃	CH ₃	H	OH	N-CH ₃
B486	CH ₃	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B487	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B488	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B489	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B490	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B491	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B492	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B493	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B494	Ph	CH ₃	CH ₃	CH ₃	OH	N-CH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B495	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B496	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B497	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B498	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B499	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B500	CF ₃	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B501	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B502	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B503	PhO	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B504	PhS	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B505	PhSO	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B506	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B507	CN	CH ₃	CH ₃	CH ₃	OH	N-CH ₃
B508	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B509	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B510	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	N-CH ₃
B511	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	N-CH ₃
B512	CH ₃ S	CH ₃ CH ₂	H	H	OH	N-CH ₃
B513	CH ₃ SO	CH ₃ CH ₂	H	H	OH	N-CH ₃
B514	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B515	Ph	CH ₃ CH ₂	H	H	OH	N-CH ₃
B516	CH ₃ O	CH ₃ CH ₂	H	H	OH	N-CH ₃
B517	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B518	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B519	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B520	HCCCH ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B521	CF ₃	CH ₃ CH ₂	H	H	OH	N-CH ₃
B522	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃
B523	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	N-CH ₃
B524	PhO	CH ₃ CH ₂	H	H	OH	N-CH ₃
B525	PhS	CH ₃ CH ₂	H	H	OH	N-CH ₃
B526	PhSO	CH ₃ CH ₂	H	H	OH	N-CH ₃
B527	PhSO ₂	CH ₃ CH ₂	H	H	OH	N-CH ₃

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B528	CN	CH ₃ CH ₂	H	H	OH	N-CH ₃
B529	H	H	H	H	OH	O
B530	CH ₃	H	H	H	OH	O
B531	CH ₃ CH ₂	H	H	H	OH	O
B532	CH ₃ CH ₂ CH ₂	H	H	H	OH	O
B533	(CH ₃) ₂ CH	H	H	H	OH	O
B534	(CH ₃) ₃ C	H	H	H	OH	O
B535	CH ₃ S	H	H	H	OH	O
B536	CH ₃ SO	H	H	H	OH	O
B537	CH ₃ SO ₂	H	H	H	OH	O
B538	Ph	H	H	H	OH	O
B539	CH ₃ O	H	H	H	OH	O
B540	CH ₃ CO ₂	H	H	H	OH	O
B541	CH ₃ CH ₂ CO ₂	H	H	H	OH	O
B542	CH ₂ =CHCH ₂	H	H	H	OH	O
B543	HCCCH ₂	H	H	H	OH	O
B544	CF ₃	H	H	H	OH	O
B545	(CH ₃) ₂ NSO ₂	H	H	H	OH	O
B546	(CH ₃) ₂ N	H	H	H	OH	O
B547	PhO	H	H	H	OH	O
B548	PhS	H	H	H	OH	O
B549	PhSO	H	H	H	OH	O
B550	PhSO ₂	H	H	H	OH	O
B551	CN	H	H	H	OH	O
B552	CH ₃	CH ₃	H	H	OH	O
B553	CH ₃ CH ₂	CH ₃	H	H	OH	O
B554	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	O
B555	(CH ₃) ₂ CH	CH ₃	H	H	OH	O
B556	(CH ₃) ₃ C	CH ₃	H	H	OH	O
B557	CH ₃ S	CH ₃	H	H	OH	O
B558	CH ₃ SO	CH ₃	H	H	OH	O
B559	CH ₃ SO ₂	CH ₃	H	H	OH	O
B560	Ph	CH ₃	H	H	OH	O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B561	CH ₃ O	CH ₃	H	H	OH	O
B562	CH ₃ CO ₂	CH ₃	H	H	OH	O
B563	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	O
B564	CH ₂ =CHCH ₂	CH ₃	H	H	OH	O
B565	HCCCH ₂	CH ₃	H	H	OH	O
B566	CF ₃	CH ₃	H	H	OH	O
B567	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	O
B568	(CH ₃) ₂ N	CH ₃	H	H	OH	O
B569	PhO	CH ₃	H	H	OH	O
B570	PhS	CH ₃	H	H	OH	O
B571	PhSO	CH ₃	H	H	OH	O
B572	PhSO ₂	CH ₃	H	H	OH	O
B573	CN	CH ₃	H	H	OH	O
B574	CH ₃	H	CH ₃	H	OH	O
B575	CH ₃ CH ₂	H	CH ₃	H	OH	O
B576	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	O
B577	(CH ₃) ₂ CH	H	CH ₃	H	OH	O
B578	(CH ₃) ₃ C	H	CH ₃	H	OH	O
B579	CH ₃ S	H	CH ₃	H	OH	O
B580	CH ₃ SO	H	CH ₃	H	OH	O
B581	CH ₃ SO ₂	H	CH ₃	H	OH	O
B582	Ph	H	CH ₃	H	OH	O
B583	CH ₃ O	H	CH ₃	H	OH	O
B584	CH ₃ CO ₂	H	CH ₃	H	OH	O
B585	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	O
B586	CH ₂ =CHCH ₂	H	CH ₃	H	OH	O
B587	HCCCH ₂	H	CH ₃	H	OH	O
B588	CF ₃	H	CH ₃	H	OH	O
B589	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	O
B590	(CH ₃) ₂ N	H	CH ₃	H	OH	O
B591	PhO	H	CH ₃	H	OH	O
B592	PhS	H	CH ₃	H	OH	O
B593	PhSO	H	CH ₃	H	OH	O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B594	PhSO ₂	H	CH ₃	H	OH	O
B595	CN	H	CH ₃	H	OH	O
B596	CH ₃	CH ₃	CH ₃	H	OH	O
B597	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	O
B598	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	O
B599	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	O
B600	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	O
B601	CH ₃ S	CH ₃	CH ₃	H	OH	O
B602	CH ₃ SO	CH ₃	CH ₃	H	OH	O
B603	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	O
B604	Ph	CH ₃	CH ₃	H	OH	O
B605	CH ₃ O	CH ₃	CH ₃	H	OH	O
B606	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	O
B607	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	O
B608	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	O
B609	HCCCH ₂	CH ₃	CH ₃	H	OH	O
B610	CF ₃	CH ₃	CH ₃	H	OH	O
B611	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	O
B612	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	O
B613	PhO	CH ₃	CH ₃	H	OH	O
B614	PhS	CH ₃	CH ₃	H	OH	O
B615	PhSO	CH ₃	CH ₃	H	OH	O
B616	PhSO ₂	CH ₃	CH ₃	H	OH	O
B617	CN	CH ₃	CH ₃	H	OH	O
B618	CH ₃	CH ₃	CH ₃	CH ₃	OH	O
B619	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	O
B620	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	O
B621	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	O
B622	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	O
B623	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	O
B624	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	O
B625	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	O
B626	Ph	CH ₃	CH ₃	CH ₃	OH	O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B627	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	O
B628	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	O
B629	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	O
B630	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	O
B631	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	O
B632	CF ₃	CH ₃	CH ₃	CH ₃	OH	O
B633	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	O
B634	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	O
B635	PhO	CH ₃	CH ₃	CH ₃	OH	O
B636	PhS	CH ₃	CH ₃	CH ₃	OH	O
B637	PhSO	CH ₃	CH ₃	CH ₃	OH	O
B638	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	O
B639	CN	CH ₃	CH ₃	CH ₃	OH	O
B640	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	O
B641	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	O
B642	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	O
B643	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	O
B644	CH ₃ S	CH ₃ CH ₂	H	H	OH	O
B645	CH ₃ SO	CH ₃ CH ₂	H	H	OH	O
B646	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	O
B647	Ph	CH ₃ CH ₂	H	H	OH	O
B648	CH ₃ O	CH ₃ CH ₂	H	H	OH	O
B649	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	O
B650	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	O
B651	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	O
B652	HCCCH ₂	CH ₃ CH ₂	H	H	OH	O
B653	CF ₃	CH ₃ CH ₂	H	H	OH	O
B654	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	O
B655	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	O
B656	PhO	CH ₃ CH ₂	H	H	OH	O
B657	PhS	CH ₃ CH ₂	H	H	OH	O
B658	PhSO	CH ₃ CH ₂	H	H	OH	O
B659	PhSO ₂	CH ₃ CH ₂	H	H	OH	O

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B660	CN	CH ₃ CH ₂	H	H	OH	O
B661	H	H	H	H	OH	S
B662	CH ₃	H	H	H	OH	S
B663	CH ₃ CH ₂	H	H	H	OH	S
B664	CH ₃ CH ₂ CH ₂	H	H	H	OH	S
B665	(CH ₃) ₂ CH	H	H	H	OH	S
B666	(CH ₃) ₃ C	H	H	H	OH	S
B667	CH ₃ S	H	H	H	OH	S
B668	CH ₃ SO	H	H	H	OH	S
B669	CH ₃ SO ₂	H	H	H	OH	S
B670	Ph	H	H	H	OH	S
B671	CH ₃ O	H	H	H	OH	S
B672	CH ₃ CO ₂	H	H	H	OH	S
B673	CH ₃ CH ₂ CO ₂	H	H	H	OH	S
B674	CH ₂ =CHCH ₂	H	H	H	OH	S
B675	HCCCH ₂	H	H	H	OH	S
B676	CF ₃	H	H	H	OH	S
B677	(CH ₃) ₂ NSO ₂	H	H	H	OH	S
B678	(CH ₃) ₂ N	H	H	H	OH	S
B679	PhO	H	H	H	OH	S
B680	PhS	H	H	H	OH	S
B681	PhSO	H	H	H	OH	S
B682	PhSO ₂	H	H	H	OH	S
B683	CN	H	H	H	OH	S
B684	CH ₃	CH ₃	H	H	OH	S
B685	CH ₃ CH ₂	CH ₃	H	H	OH	S
B686	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	S
B687	(CH ₃) ₂ CH	CH ₃	H	H	OH	S
B688	(CH ₃) ₃ C	CH ₃	H	H	OH	S
B689	CH ₃ S	CH ₃	H	H	OH	S
B690	CH ₃ SO	CH ₃	H	H	OH	S
B691	CH ₃ SO ₂	CH ₃	H	H	OH	S
B692	Ph	CH ₃	H	H	OH	S

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B693	CH ₃ O	CH ₃	H	H	OH	S
B694	CH ₃ CO ₂	CH ₃	H	H	OH	S
B695	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	S
B696	CH ₂ =CHCH ₂	CH ₃	H	H	OH	S
B697	HCCCH ₂	CH ₃	H	H	OH	S
B698	CF ₃	CH ₃	H	H	OH	S
B699	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	S
B700	(CH ₃) ₂ N	CH ₃	H	H	OH	S
B701	PhO	CH ₃	H	H	OH	S
B702	PhS	CH ₃	H	H	OH	S
B703	PhSO	CH ₃	H	H	OH	S
B704	PhSO ₂	CH ₃	H	H	OH	S
B705	CN	CH ₃	H	H	OH	S
B706	CH ₃	H	CH ₃	H	OH	S
B707	CH ₃ CH ₂	H	CH ₃	H	OH	S
B708	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	S
B709	(CH ₃) ₂ CH	H	CH ₃	H	OH	S
B710	(CH ₃) ₃ C	H	CH ₃	H	OH	S
B711	CH ₃ S	H	CH ₃	H	OH	S
B712	CH ₃ SO	H	CH ₃	H	OH	S
B713	CH ₃ SO ₂	H	CH ₃	H	OH	S
B714	Ph	H	CH ₃	H	OH	S
B715	CH ₃ O	H	CH ₃	H	OH	S
B716	CH ₃ CO ₂	H	CH ₃	H	OH	S
B717	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	S
B718	CH ₂ =CHCH ₂	H	CH ₃	H	OH	S
B719	HCCCH ₂	H	CH ₃	H	OH	S
B720	CF ₃	H	CH ₃	H	OH	S
B721	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	S
B722	(CH ₃) ₂ N	H	CH ₃	H	OH	S
B723	PhO	H	CH ₃	H	OH	S
B724	PhS	H	CH ₃	H	OH	S
B725	PhSO	H	CH ₃	H	OH	S

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B726	PhSO ₂	H	CH ₃	H	OH	S
B727	CN	H	CH ₃	H	OH	S
B728	CH ₃	CH ₃	CH ₃	H	OH	S
B729	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	S
B730	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	S
B731	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	S
B732	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	S
B733	CH ₃ S	CH ₃	CH ₃	H	OH	S
B734	CH ₃ SO	CH ₃	CH ₃	H	OH	S
B735	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	S
B736	Ph	CH ₃	CH ₃	H	OH	S
B737	CH ₃ O	CH ₃	CH ₃	H	OH	S
B738	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	S
B739	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	S
B740	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	S
B741	HCCCH ₂	CH ₃	CH ₃	H	OH	S
B742	CF ₃	CH ₃	CH ₃	H	OH	S
B743	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	S
B744	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	S
B745	PhO	CH ₃	CH ₃	H	OH	S
B746	PhS	CH ₃	CH ₃	H	OH	S
B747	PhSO	CH ₃	CH ₃	H	OH	S
B748	PhSO ₂	CH ₃	CH ₃	H	OH	S
B749	CN	CH ₃	CH ₃	H	OH	S
B750	CH ₃	CH ₃	CH ₃	CH ₃	OH	S
B751	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	S
B752	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	S
B753	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	S
B754	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	S
B755	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	S
B756	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	S
B757	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	S
B758	Ph	CH ₃	CH ₃	CH ₃	OH	S

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B759	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	S
B760	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	S
B761	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	S
B762	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	S
B763	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	S
B764	CF ₃	CH ₃	CH ₃	CH ₃	OH	S
B765	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	S
B766	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	S
B767	PhO	CH ₃	CH ₃	CH ₃	OH	S
B768	PhS	CH ₃	CH ₃	CH ₃	OH	S
B769	PhSO	CH ₃	CH ₃	CH ₃	OH	S
B770	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	S
B771	CN	CH ₃	CH ₃	CH ₃	OH	S
B772	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	S
B773	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	S
B774	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	S
B775	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	S
B776	CH ₃ S	CH ₃ CH ₂	H	H	OH	S
B777	CH ₃ SO	CH ₃ CH ₂	H	H	OH	S
B778	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	S
B779	Ph	CH ₃ CH ₂	H	H	OH	S
B780	CH ₃ O	CH ₃ CH ₂	H	H	OH	S
B781	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	S
B782	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	S
B783	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	S
B784	HCCCH ₂	CH ₃ CH ₂	H	H	OH	S
B785	CF ₃	CH ₃ CH ₂	H	H	OH	S
B786	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	S
B787	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	S
B788	PhO	CH ₃ CH ₂	H	H	OH	S
B789	PhS	CH ₃ CH ₂	H	H	OH	S
B790	PhSO	CH ₃ CH ₂	H	H	OH	S
B791	PhSO ₂	CH ₃ CH ₂	H	H	OH	S

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B792	CN	CH ₃ CH ₂	H	H	OH	S
B793	H	H	H	H	OH	SO ₂
B794	CH ₃	H	H	H	OH	SO ₂
B795	CH ₃ CH ₂	H	H	H	OH	SO ₂
B796	CH ₃ CH ₂ CH ₂	H	H	H	OH	SO ₂
B797	(CH ₃) ₂ CH	H	H	H	OH	SO ₂
B798	(CH ₃) ₃ C	H	H	H	OH	SO ₂
B799	CH ₃ S	H	H	H	OH	SO ₂
B800	CH ₃ SO	H	H	H	OH	SO ₂
B801	CH ₃ SO ₂	H	H	H	OH	SO ₂
B802	Ph	H	H	H	OH	SO ₂
B803	CH ₃ O	H	H	H	OH	SO ₂
B804	CH ₃ CO ₂	H	H	H	OH	SO ₂
B805	CH ₃ CH ₂ CO ₂	H	H	H	OH	SO ₂
B806	CH ₂ =CHCH ₂	H	H	H	OH	SO ₂
B807	HCCCH ₂	H	H	H	OH	SO ₂
B808	CF ₃	H	H	H	OH	SO ₂
B809	(CH ₃) ₂ NSO ₂	H	H	H	OH	SO ₂
B810	(CH ₃) ₂ N	H	H	H	OH	SO ₂
B811	PhO	H	H	H	OH	SO ₂
B812	PhS	H	H	H	OH	SO ₂
B813	PhSO	H	H	H	OH	SO ₂
B814	PhSO ₂	H	H	H	OH	SO ₂
B815	CN	H	H	H	OH	SO ₂
B816	CH ₃	CH ₃	H	H	OH	SO ₂
B817	CH ₃ CH ₂	CH ₃	H	H	OH	SO ₂
B818	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	SO ₂
B819	(CH ₃) ₂ CH	CH ₃	H	H	OH	SO ₂
B820	(CH ₃) ₃ C	CH ₃	H	H	OH	SO ₂
B821	CH ₃ S	CH ₃	H	H	OH	SO ₂
B822	CH ₃ SO	CH ₃	H	H	OH	SO ₂
B823	CH ₃ SO ₂	CH ₃	H	H	OH	SO ₂
B824	Ph	CH ₃	H	H	OH	SO ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B825	CH ₃ O	CH ₃	H	H	OH	SO ₂
B826	CH ₃ CO ₂	CH ₃	H	H	OH	SO ₂
B827	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	SO ₂
B828	CH ₂ =CHCH ₂	CH ₃	H	H	OH	SO ₂
B829	HCCCH ₂	CH ₃	H	H	OH	SO ₂
B830	CF ₃	CH ₃	H	H	OH	SO ₂
B831	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	SO ₂
B832	(CH ₃) ₂ N	CH ₃	H	H	OH	SO ₂
B833	PhO	CH ₃	H	H	OH	SO ₂
B834	PhS	CH ₃	H	H	OH	SO ₂
B835	PhSO	CH ₃	H	H	OH	SO ₂
B836	PhSO ₂	CH ₃	H	H	OH	SO ₂
B837	CN	CH ₃	H	H	OH	SO ₂
B838	CH ₃	H	CH ₃	H	OH	SO ₂
B839	CH ₃ CH ₂	H	CH ₃	H	OH	SO ₂
B840	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	SO ₂
B841	(CH ₃) ₂ CH	H	CH ₃	H	OH	SO ₂
B842	(CH ₃) ₃ C	H	CH ₃	H	OH	SO ₂
B843	CH ₃ S	H	CH ₃	H	OH	SO ₂
B844	CH ₃ SO	H	CH ₃	H	OH	SO ₂
B845	CH ₃ SO ₂	H	CH ₃	H	OH	SO ₂
B846	Ph	H	CH ₃	H	OH	SO ₂
B847	CH ₃ O	H	CH ₃	H	OH	SO ₂
B848	CH ₃ CO ₂	H	CH ₃	H	OH	SO ₂
B849	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	SO ₂
B850	CH ₂ =CHCH ₂	H	CH ₃	H	OH	SO ₂
B851	HCCCH ₂	H	CH ₃	H	OH	SO ₂
B852	CF ₃	H	CH ₃	H	OH	SO ₂
B853	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	SO ₂
B854	(CH ₃) ₂ N	H	CH ₃	H	OH	SO ₂
B855	PhO	H	CH ₃	H	OH	SO ₂
B856	PhS	H	CH ₃	H	OH	SO ₂
B857	PhSO	H	CH ₃	H	OH	SO ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B858	PhSO ₂	H	CH ₃	H	OH	SO ₂
B859	CN	H	CH ₃	H	OH	SO ₂
B860	CH ₃	CH ₃	CH ₃	H	OH	SO ₂
B861	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	SO ₂
B862	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	SO ₂
B863	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	SO ₂
B864	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	SO ₂
B865	CH ₃ S	CH ₃	CH ₃	H	OH	SO ₂
B866	CH ₃ SO	CH ₃	CH ₃	H	OH	SO ₂
B867	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	SO ₂
B868	Ph	CH ₃	CH ₃	H	OH	SO ₂
B869	CH ₃ O	CH ₃	CH ₃	H	OH	SO ₂
B870	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	SO ₂
B871	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	SO ₂
B872	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	SO ₂
B873	HCCCH ₂	CH ₃	CH ₃	H	OH	SO ₂
B874	CF ₃	CH ₃	CH ₃	H	OH	SO ₂
B875	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	SO ₂
B876	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	SO ₂
B877	PhO	CH ₃	CH ₃	H	OH	SO ₂
B878	PhS	CH ₃	CH ₃	H	OH	SO ₂
B879	PhSO	CH ₃	CH ₃	H	OH	SO ₂
B880	PhSO ₂	CH ₃	CH ₃	H	OH	SO ₂
B881	CN	CH ₃	CH ₃	H	OH	SO ₂
B882	CH ₃	CH ₃	CH ₃	CH ₃	OH	SO ₂
B883	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B884	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B885	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	SO ₂
B886	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	SO ₂
B887	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	SO ₂
B888	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	SO ₂
B889	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B890	Ph	CH ₃	CH ₃	CH ₃	OH	SO ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B891	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	SO ₂
B892	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B893	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B894	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B895	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B896	CF ₃	CH ₃	CH ₃	CH ₃	OH	SO ₂
B897	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B898	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	SO ₂
B899	PhO	CH ₃	CH ₃	CH ₃	OH	SO ₂
B900	PhS	CH ₃	CH ₃	CH ₃	OH	SO ₂
B901	PhSO	CH ₃	CH ₃	CH ₃	OH	SO ₂
B902	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	SO ₂
B903	CN	CH ₃	CH ₃	CH ₃	OH	SO ₂
B904	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B905	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B906	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	SO ₂
B907	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	SO ₂
B908	CH ₃ S	CH ₃ CH ₂	H	H	OH	SO ₂
B909	CH ₃ SO	CH ₃ CH ₂	H	H	OH	SO ₂
B910	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B911	Ph	CH ₃ CH ₂	H	H	OH	SO ₂
B912	CH ₃ O	CH ₃ CH ₂	H	H	OH	SO ₂
B913	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B914	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B915	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B916	HCCCH ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B917	CF ₃	CH ₃ CH ₂	H	H	OH	SO ₂
B918	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	SO ₂
B919	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	SO ₂
B920	PhO	CH ₃ CH ₂	H	H	OH	SO ₂
B921	PhS	CH ₃ CH ₂	H	H	OH	SO ₂
B922	PhSO	CH ₃ CH ₂	H	H	OH	SO ₂
B923	PhSO ₂	CH ₃ CH ₂	H	H	OH	SO ₂

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B924	CN	CH ₃ CH ₂	H	H	OH	SO ₂
B925	H	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B926	CH ₃	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B927	CH ₃ CH ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B928	CH ₃ CH ₂ CH ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B929	(CH ₃) ₂ CH	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B930	(CH ₃) ₃ C	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B931	CH ₃ S	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B932	CH ₃ SO	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B933	CH ₃ SO ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B934	Ph	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B935	CH ₃ O	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B936	CH ₃ CO ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B937	CH ₃ CH ₂ CO ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B938	CH ₂ =CHCH ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B939	HCCCH ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B940	CF ₃	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B941	(CH ₃) ₂ NSO ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B942	(CH ₃) ₂ N	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B943	PhO	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B944	PhS	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B945	PhSO	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B946	PhSO ₂	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B947	CN	H	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B948	CH ₃	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B949	CH ₃ CH ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B950	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B951	(CH ₃) ₂ CH	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B952	(CH ₃) ₃ C	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B953	CH ₃ S	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B954	CH ₃ SO	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B955	CH ₃ SO ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B956	Ph	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)

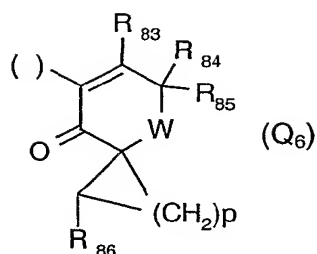
Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B957	CH ₃ O	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B958	CH ₃ CO ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B959	CH ₃ CH ₂ CO ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B960	CH ₂ =CHCH ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B961	HCCCH ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B962	CF ₃	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B963	(CH ₃) ₂ NSO ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B964	(CH ₃) ₂ N	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B965	PhO	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B966	PhS	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B967	PhSO	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B968	PhSO ₂	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B969	CN	CH ₃	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B970	CH ₃	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B971	CH ₃ CH ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B972	CH ₃ CH ₂ CH ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B973	(CH ₃) ₂ CH	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B974	(CH ₃) ₃ C	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B975	CH ₃ S	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B976	CH ₃ SO	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B977	CH ₃ SO ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B978	Ph	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B979	CH ₃ O	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B980	CH ₃ CO ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B981	CH ₃ CH ₂ CO ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B982	CH ₂ =CHCH ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B983	HCCCH ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B984	CF ₃	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B985	(CH ₃) ₂ NSO ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B986	(CH ₃) ₂ N	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B987	PhO	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B988	PhS	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B989	PhSO	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B990	PhSO ₂	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B991	CN	H	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B992	CH ₃	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B993	CH ₃ CH ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B994	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B995	(CH ₃) ₂ CH	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B996	(CH ₃) ₃ C	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B997	CH ₃ S	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B998	CH ₃ SO	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B999	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1000	Ph	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1001	CH ₃ O	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1002	CH ₃ CO ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1003	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1004	CH ₂ =CHCH ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1005	HCCCH ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1006	CF ₃	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1007	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1008	(CH ₃) ₂ N	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1009	PhO	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1010	PhS	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1011	PhSO	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1012	PhSO ₂	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1013	CN	CH ₃	CH ₃	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1014	CH ₃	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1015	CH ₃ CH ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1016	CH ₃ CH ₂ CH ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1017	(CH ₃) ₂ CH	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1018	(CH ₃) ₃ C	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1019	CH ₃ S	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1020	CH ₃ SO	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1021	CH ₃ SO ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1022	Ph	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B1023	CH ₃ O	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1024	CH ₃ CO ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1025	CH ₃ CH ₂ CO ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1026	CH ₂ =CHCH ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1027	HCCCH ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1028	CF ₃	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1029	(CH ₃) ₂ NSO ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1030	(CH ₃) ₂ N	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1031	PhO	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1032	PhS	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1033	PhSO	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1034	PhSO ₂	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1035	CN	CH ₃	CH ₃	CH ₃	OH	CH(CO ₂ CH ₂ CH ₃)
B1036	CH ₃ CH ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1037	CH ₃ CH ₂ CH ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1038	(CH ₃) ₂ CH	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1039	(CH ₃) ₃ C	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1040	CH ₃ S	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1041	CH ₃ SO	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1042	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1043	Ph	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1044	CH ₃ O	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1045	CH ₃ CO ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1046	CH ₃ CH ₂ CO ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1047	CH ₂ =CHCH ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1048	HCCCH ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1049	CF ₃	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1050	(CH ₃) ₂ NSO ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1051	(CH ₃) ₂ N	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1052	PhO	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1053	PhS	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1054	PhSO	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1055	PhSO ₂	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)

Radical	R ₄₄	R ₃₇	R ₃₈	R ₃₉	R ₄₀	W
B1056	CN	CH ₃ CH ₂	H	H	OH	CH(CO ₂ CH ₂ CH ₃)
B1057	CH ₃ OCO	H	H	H	OH	CHPh
B1058	H	H	H	H	OH	CHPh
B1059	H	H	H	H	OH	CH(CH ₂ CH ₃)
B1060	H	H	H	H	OH	CH(CH ₂ CH ₂ CH ₃)
B1061	H	H	H	H	OH	CH(CH(CH ₃) ₂)
B1062	H	H	H	H	OH	CH(C(CH ₃) ₃)
B1063	H	H	H	H	OH	C(CH ₃) ₂
B1064	H	H	H	H	OH	CH(CF ₃)
B1065	CH ₃ OCO	H	H	H	OH	C(CH ₃)(CF ₃)
B1066	H	H	H	H	OH	C(CH ₃)(CF ₃)
B1067	CH ₃ OCO	CH ₃ O	H	H	OH	CH ₂
B1068	H	CH ₃ O	H	H	OH	CH ₂
B1069	CH ₃ O	CH ₃ OCO	H	CH ₃	OH	CH ₂
B1070	CH ₃ O	H	CH ₃	H	OH	CH ₂
B1071	Cl	H	H	H	OH	CH ₂
B1072	F	H	H	H	OH	CH ₂
B1073	H	H	H	H	OH	CH(OCH ₃) ₂
B1074	H	H	H	H	OH	CH ₂ OSO ₂ CH ₃
B1075	CH ₃	CH ₃	CH ₃	CH ₃	OH	S(O)
B1076	ClCH ₂ CH ₂	H	H	H	OH	CH ₂
B1077	HO(CH ₂) ₂	H	H	H	OH	CH ₂
B1078	MsO(CH ₂) ₂	H	H	H	OH	CH ₂
B1079	HOCH(CH ₃)CH ₂	H	H	H	OH	CH ₂
B1080	MsOCH(CH ₃)CH ₂	H	H	H	OH	CH ₂
B1081	(CH ₃) ₂ CH	H	CH ₃	CH ₃	OH	CH ₂
B1082	HCCCH ₂	H	CH ₃	CH ₃	OH	CH ₂
B1083	H ₂ C=CCH ₂	H	CH ₃	CH ₃	OH	CH ₂

In the following Table 7 Q is Q₆



and Q₆ represents the following radicals C:

Table 7: Radicals C:

Radical	R ₈₄	R ₈₅	R ₈₆	R ₈₃	p	W
C1	H	H	H	OH	1	CH ₂
C2	CH ₃	H	H	OH	1	CH ₂
C3	CH ₃ CH ₂	H	H	OH	1	CH ₂
C4	CH ₃ CH ₂ CH ₂	H	H	OH	1	CH ₂
C5	(CH ₃) ₂ CH	H	H	OH	1	CH ₂
C6	(CH ₃) ₃ C	H	H	OH	1	CH ₂
C7	CH ₃ S	H	H	OH	1	CH ₂
C8	CH ₃ SO	H	H	OH	1	CH ₂
C9	CH ₃ SO ₂	H	H	OH	1	CH ₂
C10	Ph	H	H	OH	1	CH ₂
C11	CH ₃ O	H	H	OH	1	CH ₂
C12	CH ₃ OCO ₂	H	H	OH	1	CH ₂
C13	CH ₃ CH ₂ OCO ₂	H	H	OH	1	CH ₂
C14	CH ₂ =CHCH ₂	H	H	OH	1	CH ₂
C15	HCCCH ₂	H	H	OH	1	CH ₂
C16	CF ₃	H	H	OH	1	CH ₂
C17	(CH ₃) ₂ NSO ₂	H	H	OH	1	CH ₂
C18	(CH ₃) ₂ N	H	H	OH	1	CH ₂
C19	PhO	H	H	OH	1	CH ₂
C20	PhS	H	H	OH	1	CH ₂
C21	PhSO	H	H	OH	1	CH ₂
C22	PhSO ₂	H	H	OH	1	CH ₂

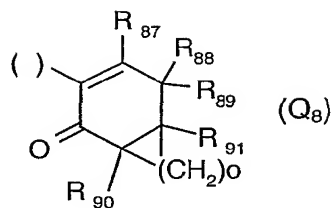
Radical	R ₈₄	R ₈₅	R ₈₆	R ₈₈	p	W
C23	CN	H	H	OH	1	CH ₂
C24	CH ₃	CH ₃	H	OH	1	CH ₂
C25	CH ₃ CH ₂	CH ₃	H	OH	1	CH ₂
C26	CH ₃ CH ₂ CH ₂	CH ₃	H	OH	1	CH ₂
C27	(CH ₃) ₂ CH	CH ₃	H	OH	1	CH ₂
C28	(CH ₃) ₃ C	CH ₃	H	OH	1	CH ₂
C29	CH ₃ S	CH ₃	H	OH	1	CH ₂
C30	CH ₃ SO	CH ₃	H	OH	1	CH ₂
C31	CH ₃ SO ₂	CH ₃	H	OH	1	CH ₂
C32	Ph	CH ₃	H	OH	1	CH ₂
C33	CH ₃ O	CH ₃	H	OH	1	CH ₂
C34	CH ₃ OCO ₂	CH ₃	H	OH	1	CH ₂
C35	CH ₃ CH ₂ OCO ₂	CH ₃	H	OH	1	CH ₂
C36	CH ₂ =CHCH ₂	CH ₃	H	OH	1	CH ₂
C37	HCCCH ₂	CH ₃	H	OH	1	CH ₂
C38	CF ₃	CH ₃	H	OH	1	CH ₂
C39	(CH ₃) ₂ NSO ₂	CH ₃	H	OH	1	CH ₂
C40	(CH ₃) ₂ N	CH ₃	H	OH	1	CH ₂
C41	PhO	CH ₃	H	OH	1	CH ₂
C42	PhS	CH ₃	H	OH	1	CH ₂
C43	PhSO	CH ₃	H	OH	1	CH ₂
C44	PhSO ₂	CH ₃	H	OH	1	CH ₂
C45	CN	CH ₃	H	OH	1	CH ₂
C46	H	H	H	OH	4	CH ₂
C47	CH ₃	H	H	OH	4	CH ₂
C48	CH ₃ CH ₂	H	H	OH	4	CH ₂
C49	CH ₃ CH ₂ CH ₂	H	H	OH	4	CH ₂
C50	(CH ₃) ₂ CH	H	H	OH	4	CH ₂
C51	(CH ₃) ₃ C	H	H	OH	4	CH ₂
C52	CH ₃ S	H	H	OH	4	CH ₂
C53	CH ₃ SO	H	H	OH	4	CH ₂
C54	CH ₃ SO ₂	H	H	OH	4	CH ₂
C55	Ph	H	H	OH	4	CH ₂

Radical	R ₈₄	R ₈₅	R ₈₆	R ₈₈	p	W
C56	CH ₃ O	H	H	OH	4	CH ₂
C57	CH ₃ OCO ₂	H	H	OH	4	CH ₂
C58	CH ₃ CH ₂ OCO ₂	H	H	OH	4	CH ₂
C59	CH ₂ =CHCH ₂	H	H	OH	4	CH ₂
C60	HCCCH ₂	H	H	OH	4	CH ₂
C61	CF ₃	H	H	OH	4	CH ₂
C62	(CH ₃) ₂ NSO ₂	H	H	OH	4	CH ₂
C63	(CH ₃) ₂ N	H	H	OH	4	CH ₂
C64	PhO	H	H	OH	4	CH ₂
C65	PhS	H	H	OH	4	CH ₂
C66	PhSO	H	H	OH	4	CH ₂
C67	PhSO ₂	H	H	OH	4	CH ₂
C68	CN	H	H	OH	4	CH ₂
C69	CH ₃	CH ₃	H	OH	4	CH ₂
C70	CH ₃ CH ₂	CH ₃	H	OH	4	CH ₂
C71	CH ₃ CH ₂ CH ₂	CH ₃	H	OH	4	CH ₂
C72	(CH ₃) ₂ CH	CH ₃	H	OH	4	CH ₂
C73	(CH ₃) ₃ C	CH ₃	H	OH	4	CH ₂
C74	CH ₃ S	CH ₃	H	OH	4	CH ₂
C75	CH ₃ SO	CH ₃	H	OH	4	CH ₂
C76	CH ₃ SO ₂	CH ₃	H	OH	4	CH ₂
C77	Ph	CH ₃	H	OH	4	CH ₂
C78	CH ₃ O	CH ₃	H	OH	4	CH ₂
C79	CH ₃ OCO ₂	CH ₃	H	OH	4	CH ₂
C80	CH ₃ CH ₂ OCO ₂	CH ₃	H	OH	4	CH ₂
C81	CH ₂ =CHCH ₂	CH ₃	H	OH	4	CH ₂
C82	HCCCH ₂	CH ₃	H	OH	4	CH ₂
C83	CF ₃	CH ₃	H	OH	4	CH ₂
C84	(CH ₃) ₂ NSO ₂	CH ₃	H	OH	4	CH ₂
C85	(CH ₃) ₂ N	CH ₃	H	OH	4	CH ₂
C86	PhO	CH ₃	H	OH	4	CH ₂
C87	PhS	CH ₃	H	OH	4	CH ₂
C88	PhSO	CH ₃	H	OH	4	CH ₂

Radical	R ₈₄	R ₈₅	R ₈₆	R ₈₃	p	W
C89	PhSO ₂	CH ₃	H	OH	4	CH ₂
C90	CN	CH ₃	H	OH	4	CH ₂
C91	H	H	H	OH	3	CH ₂
C92	CH ₃	H	H	OH	3	CH ₂
C93	CH ₃ CH ₂	H	H	OH	3	CH ₂
C94	CH ₃ CH ₂ CH ₂	H	H	OH	3	CH ₂
C95	(CH ₃) ₂ CH	H	H	OH	3	CH ₂
C96	(CH ₃) ₃ C	H	H	OH	3	CH ₂
C97	CH ₃ S	H	H	OH	3	CH ₂
C98	CH ₃ SO	H	H	OH	3	CH ₂
C99	CH ₃ SO ₂	H	H	OH	3	CH ₂
C100	Ph	H	H	OH	3	CH ₂
C101	CH ₃ O	H	H	OH	3	CH ₂
C102	CH ₃ OCO ₂	H	H	OH	3	CH ₂
C103	CH ₃ CH ₂ OCO ₂	H	H	OH	3	CH ₂
C104	CH ₂ =CHCH ₂	H	H	OH	3	CH ₂
C105	HCCCH ₂	H	H	OH	3	CH ₂
C106	CF ₃	H	H	OH	3	CH ₂
C107	(CH ₃) ₂ NSO ₂	H	H	OH	3	CH ₂
C108	(CH ₃) ₂ N	H	H	OH	3	CH ₂
C109	PhO	H	H	OH	3	CH ₂
C110	PhS	H	H	OH	3	CH ₂
C111	PhSO	H	H	OH	3	CH ₂
C112	PhSO ₂	H	H	OH	3	CH ₂
C113	CN	H	H	OH	3	CH ₂
C114	CH ₃	CH ₃	H	OH	3	CH ₂
C115	CH ₃ CH ₂	CH ₃	H	OH	3	CH ₂
C116	CH ₃ CH ₂ CH ₂	CH ₃	H	OH	3	CH ₂
C117	(CH ₃) ₂ CH	CH ₃	H	OH	3	CH ₂
C118	(CH ₃) ₃ C	CH ₃	H	OH	3	CH ₂
C119	CH ₃ S	CH ₃	H	OH	3	CH ₂
C120	CH ₃ SO	CH ₃	H	OH	3	CH ₂
C121	CH ₃ SO ₂	CH ₃	H	OH	3	CH ₂

Radical	R ₈₄	R ₈₅	R ₈₆	R ₈₃	p	W
C122	Ph	CH ₃	H	OH	3	CH ₂
C123	CH ₃ O	CH ₃	H	OH	3	CH ₂
C124	CH ₃ OCO ₂	CH ₃	H	OH	3	CH ₂
C125	CH ₃ CH ₂ OCO ₂	CH ₃	H	OH	3	CH ₂
C126	CH ₂ =CHCH ₂	CH ₃	H	OH	3	CH ₂
C127	HCCCH ₂	CH ₃	H	OH	3	CH ₂
C128	CF ₃	CH ₃	H	OH	3	CH ₂
C129	(CH ₃) ₂ NSO ₂	CH ₃	H	OH	3	CH ₂
C130	(CH ₃) ₂ N	CH ₃	H	OH	3	CH ₂
C131	PhO	CH ₃	H	OH	3	CH ₂
C132	PhS	CH ₃	H	OH	3	CH ₂
C133	PhSO	CH ₃	H	OH	3	CH ₂
C134	PhSO ₂	CH ₃	H	OH	3	CH ₂
C135	CN	CH ₃	H	OH	3	CH ₂
C136	CH ₃ CH ₂	CH ₃ CH ₂	H	OH	1	CH ₂
C137	H	H	H	OH	1	CH(CH ₃)
C138	CH ₃	H	H	OH	1	CH(CH ₃)
C139	CH ₃	CH ₃	H	OH	1	CH(CH ₃)
C140	CH ₂ CH ₃	H	H	OH	1	CH(CH ₃)
C141	CH ₂ CH ₃	CH ₃	H	OH	1	CH(CH ₃)
C142	CH ₃ CH ₂	CH ₃ CH ₂	H	OH	1	CH(CH ₃)
C143	H	H	CH ₃	OH	1	CH ₂
C144	CH ₃	CH ₃	CH ₃	OH	1	CH ₂
C145	CH ₃ CH ₂	CH ₃ CH ₂	CH ₃	OH	1	CH ₂
C146	H	H	H	OH	2	CH ₂
C147	CH ₃	CH ₃	H	OH	2	CH ₂
C148	CH ₃ CH ₂	CH ₃ CH ₂	H	OH	2	CH ₂
C149	H	H	H	OH	5	CH ₂
C150	CH ₃	CH ₃	H	OH	5	CH ₂
C151	CH ₃ CH ₂	CH ₃ CH ₂	H	OH	5	CH ₂

In the following Table 8 Q is Q₈



and Q_8 represents the following radicals D:

Table 8: Radicals D:

Radical	R_{88}	R_{89}	R_{90}	R_{91}	R_{87}	α
D1	H	H	H	H	OH	2
D2	CH_3	H	H	H	OH	2
D3	CH_3CH_2	H	H	H	OH	2
D4	$CH_3CH_2CH_2$	H	H	H	OH	2
D5	$(CH_3)_2CH$	H	H	H	OH	2
D6	$(CH_3)_3C$	H	H	H	OH	2
D7	CH_3S	H	H	H	OH	2
D8	CH_3SO	H	H	H	OH	2
D9	CH_3SO_2	H	H	H	OH	2
D10	Ph	H	H	H	OH	2
D11	CH_3O	H	H	H	OH	2
D12	$CH_2=CHCH_2$	H	H	H	OH	2
D13	$HCCCH_2$	H	H	H	OH	2
D14	CF_3	H	H	H	OH	2
D15	PhO	H	H	H	OH	2
D16	PhS	H	H	H	OH	2
D17	PhSO	H	H	H	OH	2
D18	PhSO ₂	H	H	H	OH	2
D19	CH_3	CH_3	H	H	OH	2
D20	CH_3CH_2	CH_3	H	H	OH	2
D21	$CH_3CH_2CH_2$	CH_3	H	H	OH	2
D22	$(CH_3)_2CH$	CH_3	H	H	OH	2
D23	$(CH_3)_3C$	CH_3	H	H	OH	2

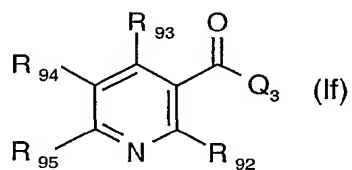
Radical	R ₈₈	R ₈₉	R ₉₀	R ₉₁	R ₈₇	o
D24	CH ₃ S	CH ₃	H	H	OH	2
D25	CH ₃ SO	CH ₃	H	H	OH	2
D26	CH ₃ SO ₂	CH ₃	H	H	OH	2
D27	Ph	CH ₃	H	H	OH	2
D28	CH ₃ O	CH ₃	H	H	OH	2
D29	CH ₂ =CHCH ₂	CH ₃	H	H	OH	2
D30	HCCCH ₂	CH ₃	H	H	OH	2
D31	CF ₃	CH ₃	H	H	OH	2
D32	PhO	CH ₃	H	H	OH	2
D33	PhS	CH ₃	H	H	OH	2
D34	PhSO	CH ₃	H	H	OH	2
D35	PhSO ₂	CH ₃	H	H	OH	2
D36	H	H	H	H	OH	3
D37	CH ₃	H	H	H	OH	3
D38	CH ₃ CH ₂	H	H	H	OH	3
D39	CH ₃ CH ₂ CH ₂	H	H	H	OH	3
D40	(CH ₃) ₂ CH	H	H	H	OH	3
D41	(CH ₃) ₃ C	H	H	H	OH	3
D42	CH ₃ S	H	H	H	OH	3
D43	CH ₃ SO	H	H	H	OH	3
D44	CH ₃ SO ₂	H	H	H	OH	3
D45	Ph	H	H	H	OH	3
D46	CH ₃ O	H	H	H	OH	3
D47	CH ₂ =CHCH ₂	H	H	H	OH	3
D48	HCCCH ₂	H	H	H	OH	3
D49	CF ₃	H	H	H	OH	3
D50	PhO	H	H	H	OH	3
D51	PhS	H	H	H	OH	3
D52	PhSO	H	H	H	OH	3
D53	PhSO ₂	H	H	H	OH	3
D54	CH ₃	CH ₃	H	H	OH	3
D55	CH ₃ CH ₂	CH ₃	H	H	OH	3
D56	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	3

Radical	R ₈₈	R ₈₉	R ₉₀	R ₉₁	R ₈₇	o
D57	(CH ₃) ₂ CH	CH ₃	H	H	OH	3
D58	(CH ₃) ₃ C	CH ₃	H	H	OH	3
D59	CH ₃ S	CH ₃	H	H	OH	3
D60	CH ₃ SO	CH ₃	H	H	OH	3
D61	CH ₃ SO ₂	CH ₃	H	H	OH	3
D62	Ph	CH ₃	H	H	OH	3
D63	CH ₃ O	CH ₃	H	H	OH	3
D64	CH ₂ =CHCH ₂	CH ₃	H	H	OH	3
D65	HCCCH ₂	CH ₃	H	H	OH	3
D66	CF ₃	CH ₃	H	H	OH	3
D67	PhO	CH ₃	H	H	OH	3
D68	PhS	CH ₃	H	H	OH	3
D69	PhSO	CH ₃	H	H	OH	3
D70	PhSO ₂	CH ₃	H	H	OH	3
D71	H	H	H	H	OH	4
D72	CH ₃	H	H	H	OH	4
D73	CH ₃ CH ₂	H	H	H	OH	4
D74	CH ₃ CH ₂ CH ₂	H	H	H	OH	4
D75	(CH ₃) ₂ CH	H	H	H	OH	4
D76	(CH ₃) ₃ C	H	H	H	OH	4
D77	CH ₃ S	H	H	H	OH	4
D78	CH ₃ SO	H	H	H	OH	4
D79	CH ₃ SO ₂	H	H	H	OH	4
D80	Ph	H	H	H	OH	4
D81	CH ₃ O	H	H	H	OH	4
D82	CH ₂ =CHCH ₂	H	H	H	OH	4
D83	HCCCH ₂	H	H	H	OH	4
D84	CF ₃	H	H	H	OH	4
D85	PhO	H	H	H	OH	4
D86	PhS	H	H	H	OH	4
D87	PhSO	H	H	H	OH	4
D88	PhSO ₂	H	H	H	OH	4
D89	CH ₃	CH ₃	H	H	OH	4

Radical	R ₈₈	R ₈₉	R ₉₀	R ₉₁	R ₈₇	o
D90	CH ₃ CH ₂	CH ₃	H	H	OH	4
D91	CH ₃ CH ₂ CH ₂	CH ₃	H	H	OH	4
D92	(CH ₃) ₂ CH	CH ₃	H	H	OH	4
D93	(CH ₃) ₃ C	CH ₃	H	H	OH	4
D94	CH ₃ S	CH ₃	H	H	OH	4
D95	CH ₃ SO	CH ₃	H	H	OH	4
D96	CH ₃ SO ₂	CH ₃	H	H	OH	4
D97	Ph	CH ₃	H	H	OH	4
D98	CH ₃ O	CH ₃	H	H	OH	4
D99	CH ₂ =CHCH ₂	CH ₃	H	H	OH	4
D100	HCCCH ₂	CH ₃	H	H	OH	4
D101	CF ₃	CH ₃	H	H	OH	4
D102	PhO	CH ₃	H	H	OH	4
D103	PhS	CH ₃	H	H	OH	4
D104	PhSO	CH ₃	H	H	OH	4
D105	PhSO ₂	CH ₃	H	H	OH	4
D106	H	H	H	CH ₃	OH	4
D107	H	H	H	CH ₃	OH	3
D108	H	H	H	H	OH	1
D109	CH ₃	H	H	H	OH	1
D110	CH ₃ OCO	CH ₃	H	H	OH	1
D111	CH ₃ CH ₂ OCO	CH ₃	H	H	OH	1
D112	CH ₃ O	CH ₃	H	H	OH	1
D113	CH ₃ S	CH ₃	H	H	OH	1
D114	CH ₃ SO	CH ₃	H	H	OH	1
D115	CH ₃ SO ₂	CH ₃	H	H	OH	1
D116	CH ₃ CH ₂	H	H	H	OH	1
D117	CH ₃ OCO	CH ₃ CH ₂	H	H	OH	1
D118	CH ₃ CH ₂ OCO	CH ₃ CH ₂	H	H	OH	1
D119	CH ₃ O	CH ₃ CH ₂	H	H	OH	1
D120	CH ₃ S	CH ₃ CH ₂	H	H	OH	1
D121	CH ₃ SO	CH ₃ CH ₂	H	H	OH	1
D122	CH ₃ SO ₂	CH ₃ CH ₂	H	H	OH	1

Radical	R ₈₈	R ₈₉	R ₉₀	R ₉₁	R ₈₇	o
D123	CH ₃ CH ₂ S	CH ₃	H	H	OH	1
D124	CH ₃ CH ₂ SO	CH ₃	H	H	OH	1
D125	CH ₃ CH ₂ SO ₂	CH ₃	H	H	OH	1
D126	CH ₃ CH ₂ S	CH ₃ CH ₂	H	H	OH	1
D127	CH ₃ CH ₂ SO	CH ₃ CH ₂	H	H	OH	1
D128	CH ₃ CH ₂ SO ₂	CH ₃ CH ₂	H	H	OH	1
D129	H	H	CH ₃	H	OH	1
D130	CH ₃	H	CH ₃	H	OH	1
D131	CH ₃ OCO	CH ₃	CH ₃	H	OH	1
D132	CH ₃ CH ₂ OCO	CH ₃	CH ₃	H	OH	1
D133	CH ₃ O	CH ₃	CH ₃	H	OH	1
D134	CH ₃ S	CH ₃	CH ₃	H	OH	1
D135	CH ₃ SO	CH ₃	CH ₃	H	OH	1
D136	CH ₃ SO ₂	CH ₃	CH ₃	H	OH	1
D137	H	H	H	CH ₃	OH	1
D138	CH ₃	H	H	CH ₃	OH	1
D139	H	H	CH ₃	CH ₃	OH	1
D140	CH ₃ CH ₂ OCO	CH ₃	H	H	OH	4

Table 9: Compounds of formula If:



Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A1	H	H	H	CF ₃	B24
A2	CH ₃	H	H	CF ₃	B24
A3	CH ₃ CH ₂	H	H	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A4	(CH ₃) ₂ CH	H	H	CF ₃	B24
A5	(CH ₃) ₃ C	H	H	CF ₃	B24
A6	cyclopropyl	H	H	CF ₃	B24
A7	CH ₃ (CH ₂) ₂	H	H	CF ₃	B24
A8	CH ₃ OCH ₂	H	H	CF ₃	B24
A9	CH ₃ O(CH ₂) ₂	H	H	CF ₃	B24
A10	Ph	H	H	CF ₃	B24
A11	PhO	H	H	CF ₃	B24
A12	PhS	H	H	CF ₃	B24
A13	PhSO	H	H	CF ₃	B24
A14	PhSO ₂	H	H	CF ₃	B24
A15	CH ₃ S	H	H	CF ₃	B24
A16	CH ₃ SO	H	H	CF ₃	B24
A17	CF ₃	H	H	CF ₃	B24
A18	F ₂ CH	H	H	CF ₃	B24
A19	HCC	H	H	CF ₃	B24
A20	CH ₃ CC	H	H	CF ₃	B24
A21	CH ₂ =CH	H	H	CF ₃	B24
A22	CH ₂ =CHCH ₂	H	H	CF ₃	B24
A23	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃	B24
A24	(CH ₃) ₂ N	H	H	CF ₃	B24
A25	(CH ₃) ₂ NSO ₂	H	H	CF ₃	B24
A26	ClCH ₂	H	H	CF ₃	B24
A27	CH ₃ SCH ₂	H	H	CF ₃	B24
A28	CH ₃ SOCH ₂	H	H	CF ₃	B24
A29	CH ₃ SO ₂ CH ₂	H	H	CF ₃	B24
A30	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃	B24
A31	CH ₃	CF ₃	H	CH ₃	B24
A32	CH ₃	CH ₃	H	CF ₃	B24
A33	H	H	H	CF ₃ CF ₂	B24
A34	CH ₃	H	H	CF ₃ CF ₂	B24
A35	CH ₃ CH ₂	H	H	CF ₃ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A36	cyclopropyl	H	H	CF ₃ CF ₂	B24
A37	(CH ₃) ₃ C	H	H	CF ₃ CF ₂	B24
A38	(CH ₃) ₂ CH	H	H	CF ₃ CF ₂	B24
A39	CH ₃ (CH ₂) ₂	H	H	CF ₃ CF ₂	B24
A40	CH ₃ OCH ₂	H	H	CF ₃ CF ₂	B24
A41	CH ₃ O(CH ₂) ₂	H	H	CF ₃ CF ₂	B24
A42	Ph	H	H	CF ₃ CF ₂	B24
A43	PhO	H	H	CF ₃ CF ₂	B24
A44	PhS	H	H	CF ₃ CF ₂	B24
A45	PhSO	H	H	CF ₃ CF ₂	B24
A46	PhSO ₂	H	H	CF ₃ CF ₂	B24
A47	CH ₃ S	H	H	CF ₃ CF ₂	B24
A48	CH ₃ SO	H	H	CF ₃ CF ₂	B24
A49	CF ₃	H	H	CF ₃ CF ₂	B24
A50	F ₂ CH	H	H	CF ₃ CF ₂	B24
A51	HCC	H	H	CF ₃ CF ₂	B24
A52	CH ₃ CC	H	H	CF ₃ CF ₂	B24
A53	CH ₂ =CH	H	H	CF ₃ CF ₂	B24
A54	CH ₂ =CHCH ₂	H	H	CF ₃ CF ₂	B24
A55	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃ CF ₂	B24
A56	(CH ₃) ₂ N	H	H	CF ₃ CF ₂	B24
A57	(CH ₃) ₂ NSO ₂	H	H	CF ₃ CF ₂	B24
A58	ClCH ₂	H	H	CF ₃ CF ₂	B24
A59	CH ₃ SCH ₂	H	H	CF ₃ CF ₂	B24
A60	CH ₃ SOCH ₂	H	H	CF ₃ CF ₂	B24
A61	CH ₃ SO ₂ CH ₂	H	H	CF ₃ CF ₂	B24
A62	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃ CF ₂	B24
A63	H	H	H	CF ₃ CF ₂ CF ₂	B24
A64	CH ₃	H	H	CF ₃ CF ₂ CF ₂	B24
A65	CH ₃ CH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A66	cyclopropyl	H	H	CF ₃ CF ₂ CF ₂	B24
A67	(CH ₃) ₃ C	H	H	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A68	(CH ₃) ₂ CH	H	H	CF ₃ CF ₂ CF ₂	B24
A69	CH ₃ (CH ₂) ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A70	CH ₃ OCH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A71	CH ₃ O(CH ₂) ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A72	Ph	H	H	CF ₃ CF ₂ CF ₂	B24
A73	PhO	H	H	CF ₃ CF ₂ CF ₂	B24
A74	PhS	H	H	CF ₃ CF ₂ CF ₂	B24
A75	PhSO	H	H	CF ₃ CF ₂ CF ₂	B24
A76	PhSO ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A77	CH ₃ S	H	H	CF ₃ CF ₂ CF ₂	B24
A78	CH ₃ SO	H	H	CF ₃ CF ₂ CF ₂	B24
A79	CF ₃	H	H	CF ₃ CF ₂ CF ₂	B24
A80	F ₂ CH	H	H	CF ₃ CF ₂ CF ₂	B24
A81	HCC	H	H	CF ₃ CF ₂ CF ₂	B24
A82	CH ₃ CC	H	H	CF ₃ CF ₂ CF ₂	B24
A83	CH ₂ =CH	H	H	CF ₃ CF ₂ CF ₂	B24
A84	CH ₂ =CHCH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A85	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₃ CF ₂ CF ₂	B24
A86	(CH ₃) ₂ N	H	H	CF ₃ CF ₂ CF ₂	B24
A87	(CH ₃) ₂ NSO ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A88	ClCH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A89	CH ₃ SCH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A90	CH ₃ SOCH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A91	CH ₃ SO ₂ CH ₂	H	H	CF ₃ CF ₂ CF ₂	B24
A92	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₃ CF ₂ CF ₂	B24
A93	H	H	H	CF ₂ Cl	B24
A94	CH ₃	H	H	CF ₂ Cl	B24
A95	CH ₃ CH ₂	H	H	CF ₂ Cl	B24
A96	cyclopropyl	H	H	CF ₂ Cl	B24
A97	(CH ₃) ₃ C	H	H	CF ₂ Cl	B24
A98	(CH ₃) ₂ CH	H	H	CF ₂ Cl	B24
A99	CH ₃ (CH ₂) ₂	H	H	CF ₂ Cl	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A100	CH ₃ OCH ₂	H	H	CF ₂ Cl	B24
A101	CH ₃ O(CH ₂) ₂	H	H	CF ₂ Cl	B24
A102	Ph	H	H	CF ₂ Cl	B24
A103	PhO	H	H	CF ₂ Cl	B24
A104	PhS	H	H	CF ₂ Cl	B24
A105	PhSO	H	H	CF ₂ Cl	B24
A106	PhSO ₂	H	H	CF ₂ Cl	B24
A107	CH ₃ S	H	H	CF ₂ Cl	B24
A108	CH ₃ SO	H	H	CF ₂ Cl	B24
A109	CF ₃	H	H	CF ₂ Cl	B24
A110	F ₂ CH	H	H	CF ₂ Cl	B24
A111	HCC	H	H	CF ₂ Cl	B24
A112	CH ₃ CC	H	H	CF ₂ Cl	B24
A113	CH ₂ =CH	H	H	CF ₂ Cl	B24
A114	CH ₂ =CHCH ₂	H	H	CF ₂ Cl	B24
A115	CH ₃ SO ₂ N(CH ₃)	H	H	CF ₂ Cl	B24
A116	(CH ₃) ₂ N	H	H	CF ₂ Cl	B24
A117	(CH ₃) ₂ NSO ₂	H	H	CF ₂ Cl	B24
A118	ClCH ₂	H	H	CF ₂ Cl	B24
A119	CH ₃ SCH ₂	H	H	CF ₂ Cl	B24
A120	CH ₃ SOCH ₂	H	H	CF ₂ Cl	B24
A121	CH ₃ SO ₂ CH ₂	H	H	CF ₂ Cl	B24
A122	[1,2,4]-triazol-1-yl-methyl	H	H	CF ₂ Cl	B24
A123	H	H	H	CHF ₂	B24
A124	CH ₃	H	H	CHF ₂	B24
A125	CH ₃ CH ₂	H	H	CHF ₂	B24
A126	cyclopropyl	H	H	CHF ₂	B24
A127	(CH ₃) ₃ C	H	H	CHF ₂	B24
A128	(CH ₃) ₂ CH	H	H	CHF ₂	B24
A129	CH ₃ (CH ₂) ₂	H	H	CHF ₂	B24
A130	CH ₃ OCH ₂	H	H	CHF ₂	B24
A131	CH ₃ O(CH ₂) ₂	H	H	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A132	Ph	H	H	CHF ₂	B24
A133	PhO	H	H	CHF ₂	B24
A134	PhS	H	H	CHF ₂	B24
A135	PhSO	H	H	CHF ₂	B24
A136	PhSO ₂	H	H	CHF ₂	B24
A137	CH ₃ S	H	H	CHF ₂	B24
A138	CH ₃ SO	H	H	CHF ₂	B24
A139	CF ₃	H	H	CHF ₂	B24
A140	F ₂ CH	H	H	CHF ₂	B24
A141	HCC	H	H	CHF ₂	B24
A142	CH ₃ CC	H	H	CHF ₂	B24
A143	CH ₂ =CH	H	H	CHF ₂	B24
A144	CH ₂ =CHCH ₂	H	H	CHF ₂	B24
A145	CH ₃ SO ₂ N(CH ₃)	H	H	CHF ₂	B24
A146	(CH ₃) ₂ N	H	H	CHF ₂	B24
A147	(CH ₃) ₂ NSO ₂	H	H	CHF ₂	B24
A148	ClCH ₂	H	H	CHF ₂	B24
A149	CH ₃ SCH ₂	H	H	CHF ₂	B24
A150	CH ₃ SOCH ₂	H	H	CHF ₂	B24
A151	CH ₃ SO ₂ CH ₂	H	H	CHF ₂	B24
A152	[1,2,4]-triazol-1-yl-methyl	H	H	CHF ₂	B24
A153	H	H	H	CCl ₃	B24
A154	CH ₃	H	H	CCl ₃	B24
A155	CH ₃ CH ₂	H	H	CCl ₃	B24
A156	cyclopropyl	H	H	CCl ₃	B24
A157	(CH ₃) ₃ C	H	H	CCl ₃	B24
A158	(CH ₃) ₂ CH	H	H	CCl ₃	B24
A159	CH ₃ (CH ₂) ₂	H	H	CCl ₃	B24
A160	CH ₃ OCH ₂	H	H	CCl ₃	B24
A161	CH ₃ O(CH ₂) ₂	H	H	CCl ₃	B24
A162	Ph	H	H	CCl ₃	B24
A163	PhO	H	H	CCl ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A164	PhS	H	H	CCl ₃	B24
A165	PhSO	H	H	CCl ₃	B24
A166	PhSO ₂	H	H	CCl ₃	B24
A167	CH ₃ S	H	H	CCl ₃	B24
A168	CH ₃ SO	H	H	CCl ₃	B24
A169	CF ₃	H	H	CCl ₃	B24
A170	F ₂ CH	H	H	CCl ₃	B24
A171	HCC	H	H	CCl ₃	B24
A172	CH ₃ CC	H	H	CCl ₃	B24
A173	CH ₂ =CH	H	H	CCl ₃	B24
A174	CH ₂ =CHCH ₂	H	H	CCl ₃	B24
A175	CH ₃ SO ₂ N(CH ₃)	H	H	CCl ₃	B24
A176	(CH ₃) ₂ N	H	H	CCl ₃	B24
A177	(CH ₃) ₂ NSO ₂	H	H	CCl ₃	B24
A178	ClCH ₂	H	H	CCl ₃	B24
A179	CH ₃ SCH ₂	H	H	CCl ₃	B24
A180	CH ₃ SOCH ₂	H	H	CCl ₃	B24
A181	CH ₃ SO ₂ CH ₂	H	H	CCl ₃	B24
A182	[1,2,4]-triazol-1-yl-methyl	H	H	CCl ₃	B24
A183	H	H	CH ₃	CF ₃	B24
A184	CH ₃	H	CH ₃	CF ₃	B24
A185	CH ₃ CH ₂	H	CH ₃	CF ₃	B24
A186	cyclopropyl	H	CH ₃	CF ₃	B24
A187	(CH ₃) ₃ C	H	CH ₃	CF ₃	B24
A188	(CH ₃) ₂ CH	H	CH ₃	CF ₃	B24
A189	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃	B24
A190	CH ₃ OCH ₂	H	CH ₃	CF ₃	B24
A191	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃	B24
A192	Ph	H	CH ₃	CF ₃	B24
A193	PhO	H	CH ₃	CF ₃	B24
A194	PhS	H	CH ₃	CF ₃	B24
A195	PhSO	H	CH ₃	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A196	PhSO ₂	H	CH ₃	CF ₃	B24
A197	CH ₃ S	H	CH ₃	CF ₃	B24
A198	CH ₃ SO	H	CH ₃	CF ₃	B24
A199	CF ₃	H	CH ₃	CF ₃	B24
A200	F ₂ CH	H	CH ₃	CF ₃	B24
A201	HCC	H	CH ₃	CF ₃	B24
A202	CH ₃ CC	H	CH ₃	CF ₃	B24
A203	CH ₂ =CH	H	CH ₃	CF ₃	B24
A204	CH ₂ =CHCH ₂	H	CH ₃	CF ₃	B24
A205	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃	B24
A206	(CH ₃) ₂ N	H	CH ₃	CF ₃	B24
A207	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃	B24
A208	ClCH ₂	H	CH ₃	CF ₃	B24
A209	CH ₃ SCH ₂	H	CH ₃	CF ₃	B24
A210	CH ₃ SOCH ₂	H	CH ₃	CF ₃	B24
A211	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃	B24
A212	H	H	CH ₃	CF ₃ CF ₂	B24
A213	CH ₃	H	CH ₃	CF ₃ CF ₂	B24
A214	CH ₃ CH ₂	H	CH ₃	CF ₃ CF ₂	B24
A215	cyclopropyl	H	CH ₃	CF ₃ CF ₂	B24
A216	(CH ₃) ₃ C	H	CH ₃	CF ₃ CF ₂	B24
A217	(CH ₃) ₂ CH	H	CH ₃	CF ₃ CF ₂	B24
A218	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃ CF ₂	B24
A219	CH ₃ OCH ₂	H	CH ₃	CF ₃ CF ₂	B24
A220	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃ CF ₂	B24
A221	Ph	H	CH ₃	CF ₃ CF ₂	B24
A222	PhO	H	CH ₃	CF ₃ CF ₂	B24
A223	PhS	H	CH ₃	CF ₃ CF ₂	B24
A224	PhSO	H	CH ₃	CF ₃ CF ₂	B24
A225	PhSO ₂	H	CH ₃	CF ₃ CF ₂	B24
A226	CH ₃ S	H	CH ₃	CF ₃ CF ₂	B24
A227	CH ₃ SO	H	CH ₃	CF ₃ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A228	CF ₃	H	CH ₃	CF ₃ CF ₂	B24
A229	F ₂ CH	H	CH ₃	CF ₃ CF ₂	B24
A230	HCC	H	CH ₃	CF ₃ CF ₂	B24
A231	CH ₃ CC	H	CH ₃	CF ₃ CF ₂	B24
A232	CH ₂ =CH	H	CH ₃	CF ₃ CF ₂	B24
A233	CH ₂ =CHCH ₂	H	CH ₃	CF ₃ CF ₂	B24
A234	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃ CF ₂	B24
A235	(CH ₃) ₂ N	H	CH ₃	CF ₃ CF ₂	B24
A236	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃ CF ₂	B24
A237	ClCH ₂	H	CH ₃	CF ₃ CF ₂	B24
A238	CH ₃ SCH ₂	H	CH ₃	CF ₃ CF ₂	B24
A239	CH ₃ SOCH ₂	H	CH ₃	CF ₃ CF ₂	B24
A240	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃ CF ₂	B24
A241	H	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A242	CH ₃	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A243	CH ₃ CH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A244	cyclopropyl	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A245	(CH ₃) ₃ C	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A246	(CH ₃) ₂ CH	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A247	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A248	CH ₃ OCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A249	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A250	Ph	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A251	PhO	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A252	PhS	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A253	PhSO	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A254	PhSO ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A255	CH ₃ S	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A256	CH ₃ SO	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A257	CF ₃	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A258	F ₂ CH	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A259	HCC	H	CH ₃	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A260	CH ₃ CC	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A261	CH ₂ =CH	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A262	CH ₂ =CHCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A263	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A264	(CH ₃) ₂ N	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A265	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A266	ClCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A267	CH ₃ SCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A268	CH ₃ SOCH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A269	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₃ CF ₂ CF ₂	B24
A270	H	H	CH ₃	CF ₂ Cl	B24
A271	CH ₃	H	CH ₃	CF ₂ Cl	B24
A272	CH ₃ CH ₂	H	CH ₃	CF ₂ Cl	B24
A273	cyclopropyl	H	CH ₃	CF ₂ Cl	B24
A274	(CH ₃) ₃ C	H	CH ₃	CF ₂ Cl	B24
A275	(CH ₃) ₂ CH	H	CH ₃	CF ₂ Cl	B24
A276	CH ₃ (CH ₂) ₂	H	CH ₃	CF ₂ Cl	B24
A277	CH ₃ OCH ₂	H	CH ₃	CF ₂ Cl	B24
A278	CH ₃ O(CH ₂) ₂	H	CH ₃	CF ₂ Cl	B24
A279	Ph	H	CH ₃	CF ₂ Cl	B24
A280	PhO	H	CH ₃	CF ₂ Cl	B24
A281	PhS	H	CH ₃	CF ₂ Cl	B24
A282	PhSO	H	CH ₃	CF ₂ Cl	B24
A283	PhSO ₂	H	CH ₃	CF ₂ Cl	B24
A284	CH ₃ S	H	CH ₃	CF ₂ Cl	B24
A285	CH ₃ SO	H	CH ₃	CF ₂ Cl	B24
A286	CF ₃	H	CH ₃	CF ₂ Cl	B24
A287	F ₂ CH	H	CH ₃	CF ₂ Cl	B24
A288	HCC	H	CH ₃	CF ₂ Cl	B24
A289	CH ₃ CC	H	CH ₃	CF ₂ Cl	B24
A290	CH ₂ =CH	H	CH ₃	CF ₂ Cl	B24
A291	CH ₂ =CHCH ₂	H	CH ₃	CF ₂ Cl	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A292	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CF ₂ Cl	B24
A293	(CH ₃) ₂ N	H	CH ₃	CF ₂ Cl	B24
A294	(CH ₃) ₂ NSO ₂	H	CH ₃	CF ₂ Cl	B24
A295	ClCH ₂	H	CH ₃	CF ₂ Cl	B24
A296	CH ₃ SCH ₂	H	CH ₃	CF ₂ Cl	B24
A297	CH ₃ SOCH ₂	H	CH ₃	CF ₂ Cl	B24
A298	CH ₃ SO ₂ CH ₂	H	CH ₃	CF ₂ Cl	B24
A299	H	H	CH ₃	CHF ₂	B24
A300	CH ₃	H	CH ₃	CHF ₂	B24
A301	CH ₃ CH ₂	H	CH ₃	CHF ₂	B24
A302	cyclopropyl	H	CH ₃	CHF ₂	B24
A303	(CH ₃) ₃ C	H	CH ₃	CHF ₂	B24
A304	(CH ₃) ₂ CH	H	CH ₃	CHF ₂	B24
A305	CH ₃ (CH ₂) ₂	H	CH ₃	CHF ₂	B24
A306	CH ₃ OCH ₂	H	CH ₃	CHF ₂	B24
A307	CH ₃ O(CH ₂) ₂	H	CH ₃	CHF ₂	B24
A308	Ph	H	CH ₃	CHF ₂	B24
A309	PhO	H	CH ₃	CHF ₂	B24
A310	PhS	H	CH ₃	CHF ₂	B24
A311	PhSO	H	CH ₃	CHF ₂	B24
A312	PhSO ₂	H	CH ₃	CHF ₂	B24
A313	CH ₃ S	H	CH ₃	CHF ₂	B24
A314	CH ₃ SO	H	CH ₃	CHF ₂	B24
A315	CF ₃	H	CH ₃	CHF ₂	B24
A316	F ₂ CH	H	CH ₃	CHF ₂	B24
A317	HCC	H	CH ₃	CHF ₂	B24
A318	CH ₃ CC	H	CH ₃	CHF ₂	B24
A319	CH ₂ =CH	H	CH ₃	CHF ₂	B24
A320	CH ₂ =CHCH ₂	H	CH ₃	CHF ₂	B24
A321	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CHF ₂	B24
A322	(CH ₃) ₂ N	H	CH ₃	CHF ₂	B24
A323	(CH ₃) ₂ NSO ₂	H	CH ₃	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A324	ClCH ₂	H	CH ₃	CHF ₂	B24
A325	CH ₃ SCH ₂	H	CH ₃	CHF ₂	B24
A326	CH ₃ SOCH ₂	H	CH ₃	CHF ₂	B24
A327	CH ₃ SO ₂ CH ₂	H	CH ₃	CHF ₂	B24
A328	H	H	CH ₃	CCl ₃	B24
A329	CH ₃	H	CH ₃	CCl ₃	B24
A330	CH ₃ CH ₂	H	CH ₃	CCl ₃	B24
A331	(CH ₃) ₃ C	H	CH ₃	CCl ₃	B24
A332	(CH ₃) ₂ CH	H	CH ₃	CCl ₃	B24
A333	cyclopropyl	H	CH ₃	CCl ₃	B24
A334	CH ₃ (CH ₂) ₂	H	CH ₃	CCl ₃	B24
A335	CH ₃ OCH ₂	H	CH ₃	CCl ₃	B24
A336	CH ₃ O(CH ₂) ₂	H	CH ₃	CCl ₃	B24
A337	Ph	H	CH ₃	CCl ₃	B24
A338	PhO	H	CH ₃	CCl ₃	B24
A339	PhS	H	CH ₃	CCl ₃	B24
A340	PhSO	H	CH ₃	CCl ₃	B24
A341	PhSO ₂	H	CH ₃	CCl ₃	B24
A342	CH ₃ S	H	CH ₃	CCl ₃	B24
A343	CH ₃ SO	H	CH ₃	CCl ₃	B24
A344	CF ₃	H	CH ₃	CCl ₃	B24
A345	F ₂ CH	H	CH ₃	CCl ₃	B24
A346	HCC	H	CH ₃	CCl ₃	B24
A347	CH ₃ CC	H	CH ₃	CCl ₃	B24
A348	CH ₂ =CH	H	CH ₃	CCl ₃	B24
A349	CH ₂ =CHCH ₂	H	CH ₃	CCl ₃	B24
A350	CH ₃ SO ₂ N(CH ₃)	H	CH ₃	CCl ₃	B24
A351	(CH ₃) ₂ N	H	CH ₃	CCl ₃	B24
A352	(CH ₃) ₂ NSO ₂	H	CH ₃	CCl ₃	B24
A353	ClCH ₂	H	CH ₃	CCl ₃	B24
A354	CH ₃ SCH ₂	H	CH ₃	CCl ₃	B24
A355	CH ₃ SOCH ₂	H	CH ₃	CCl ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A356	CH ₃ SO ₂ CH ₂	H	CH ₃	CCl ₃	B24
A357	H	H	Ph	CF ₃	B24
A358	CH ₃	H	Ph	CF ₃	B24
A359	CH ₃ CH ₂	H	Ph	CF ₃	B24
A360	cyclopropyl	H	Ph	CF ₃	B24
A361	(CH ₃) ₃ C	H	Ph	CF ₃	B24
A362	(CH ₃) ₂ CH	H	Ph	CF ₃	B24
A363	CH ₃ (CH ₂) ₂	H	Ph	CF ₃	B24
A364	CH ₃ OCH ₂	H	Ph	CF ₃	B24
A365	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃	B24
A366	Ph	H	Ph	CF ₃	B24
A367	PhO	H	Ph	CF ₃	B24
A368	PhS	H	Ph	CF ₃	B24
A369	PhSO	H	Ph	CF ₃	B24
A370	PhSO ₂	H	Ph	CF ₃	B24
A371	CH ₃ S	H	Ph	CF ₃	B24
A372	CH ₃ SO	H	Ph	CF ₃	B24
A373	CF ₃	H	Ph	CF ₃	B24
A374	F ₂ CH	H	Ph	CF ₃	B24
A375	HCC	H	Ph	CF ₃	B24
A376	CH ₃ CC	H	Ph	CF ₃	B24
A377	CH ₂ =CH	H	Ph	CF ₃	B24
A378	CH ₂ =CHCH ₂	H	Ph	CF ₃	B24
A379	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃	B24
A380	(CH ₃) ₂ N	H	Ph	CF ₃	B24
A381	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃	B24
A382	ClCH ₂	H	Ph	CF ₃	B24
A383	CH ₃ SCH ₂	H	Ph	CF ₃	B24
A384	CH ₃ SOCH ₂	H	Ph	CF ₃	B24
A385	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃	B24
A386	H	H	Ph	CF ₃ CF ₂	B24
A387	CH ₃	H	Ph	CF ₃ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A388	CH ₃ CH ₂	H	Ph	CF ₃ CF ₂	B24
A389	cyclopropyl	H	Ph	CF ₃ CF ₂	B24
A390	(CH ₃) ₃ C	H	Ph	CF ₃ CF ₂	B24
A391	(CH ₃) ₂ CH	H	Ph	CF ₃ CF ₂	B24
A392	CH ₃ (CH ₂) ₂	H	Ph	CF ₃ CF ₂	B24
A393	CH ₃ OCH ₂	H	Ph	CF ₃ CF ₂	B24
A394	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃ CF ₂	B24
A395	Ph	H	Ph	CF ₃ CF ₂	B24
A396	PhO	H	Ph	CF ₃ CF ₂	B24
A397	PhS	H	Ph	CF ₃ CF ₂	B24
A398	PhSO	H	Ph	CF ₃ CF ₂	B24
A399	PhSO ₂	H	Ph	CF ₃ CF ₂	B24
A400	CH ₃ S	H	Ph	CF ₃ CF ₂	B24
A401	CH ₃ SO	H	Ph	CF ₃ CF ₂	B24
A402	CF ₃	H	Ph	CF ₃ CF ₂	B24
A403	F ₂ CH	H	Ph	CF ₃ CF ₂	B24
A404	HCC	H	Ph	CF ₃ CF ₂	B24
A405	CH ₃ CC	H	Ph	CF ₃ CF ₂	B24
A406	CH ₂ =CH	H	Ph	CF ₃ CF ₂	B24
A407	CH ₂ =CHCH ₂	H	Ph	CF ₃ CF ₂	B24
A408	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃ CF ₂	B24
A409	(CH ₃) ₂ N	H	Ph	CF ₃ CF ₂	B24
A410	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃ CF ₂	B24
A411	ClCH ₂	H	Ph	CF ₃ CF ₂	B24
A412	CH ₃ SCH ₂	H	Ph	CF ₃ CF ₂	B24
A413	CH ₃ SOCH ₂	H	Ph	CF ₃ CF ₂	B24
A414	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃ CF ₂	B24
A415	H	H	Ph	CF ₃ CF ₂ CF ₂	B24
A416	CH ₃	H	Ph	CF ₃ CF ₂ CF ₂	B24
A417	CH ₃ CH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A418	cyclopropyl	H	Ph	CF ₃ CF ₂ CF ₂	B24
A419	(CH ₃) ₃ C	H	Ph	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A420	(CH ₃) ₂ CH	H	Ph	CF ₃ CF ₂ CF ₂	B24
A421	CH ₃ (CH ₂) ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A422	CH ₃ OCH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A423	CH ₃ O(CH ₂) ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A424	Ph	H	Ph	CF ₃ CF ₂ CF ₂	B24
A425	PhO	H	Ph	CF ₃ CF ₂ CF ₂	B24
A426	PhS	H	Ph	CF ₃ CF ₂ CF ₂	B24
A427	PhSO	H	Ph	CF ₃ CF ₂ CF ₂	B24
A428	PhSO ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A429	CH ₃ S	H	Ph	CF ₃ CF ₂ CF ₂	B24
A430	CH ₃ SO	H	Ph	CF ₃ CF ₂ CF ₂	B24
A431	CF ₃	H	Ph	CF ₃ CF ₂ CF ₂	B24
A432	F ₂ CH	H	Ph	CF ₃ CF ₂ CF ₂	B24
A433	HCC	H	Ph	CF ₃ CF ₂ CF ₂	B24
A434	CH ₃ CC	H	Ph	CF ₃ CF ₂ CF ₂	B24
A435	CH ₂ =CH	H	Ph	CF ₃ CF ₂ CF ₂	B24
A436	CH ₂ =CHCH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A437	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₃ CF ₂ CF ₂	B24
A438	(CH ₃) ₂ N	H	Ph	CF ₃ CF ₂ CF ₂	B24
A439	(CH ₃) ₂ NSO ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A440	ClCH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A441	CH ₃ SCH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A442	CH ₃ SOCH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A443	CH ₃ SO ₂ CH ₂	H	Ph	CF ₃ CF ₂ CF ₂	B24
A444	H	H	Ph	CF ₂ Cl	B24
A445	CH ₃	H	Ph	CF ₂ Cl	B24
A446	CH ₃ CH ₂	H	Ph	CF ₂ Cl	B24
A447	cyclopropyl	H	Ph	CF ₂ Cl	B24
A448	(CH ₃) ₃ C	H	Ph	CF ₂ Cl	B24
A449	(CH ₃) ₂ CH	H	Ph	CF ₂ Cl	B24
A450	CH ₃ (CH ₂) ₂	H	Ph	CF ₂ Cl	B24
A451	CH ₃ OCH ₂	H	Ph	CF ₂ Cl	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A452	CH ₃ O(CH ₂) ₂	H	Ph	CF ₂ Cl	B24
A453	Ph	H	Ph	CF ₂ Cl	B24
A454	PhO	H	Ph	CF ₂ Cl	B24
A455	PhS	H	Ph	CF ₂ Cl	B24
A456	PhSO	H	Ph	CF ₂ Cl	B24
A457	PhSO ₂	H	Ph	CF ₂ Cl	B24
A458	CH ₃ S	H	Ph	CF ₂ Cl	B24
A459	CH ₃ SO	H	Ph	CF ₂ Cl	B24
A460	CF ₃	H	Ph	CF ₂ Cl	B24
A461	F ₂ CH	H	Ph	CF ₂ Cl	B24
A462	HCC	H	Ph	CF ₂ Cl	B24
A463	CH ₃ CC	H	Ph	CF ₂ Cl	B24
A464	CH ₂ =CH	H	Ph	CF ₂ Cl	B24
A465	CH ₂ =CHCH ₂	H	Ph	CF ₂ Cl	B24
A466	CH ₃ SO ₂ N(CH ₃)	H	Ph	CF ₂ Cl	B24
A467	(CH ₃) ₂ N	H	Ph	CF ₂ Cl	B24
A468	(CH ₃) ₂ NSO ₂	H	Ph	CF ₂ Cl	B24
A469	ClCH ₂	H	Ph	CF ₂ Cl	B24
A470	CH ₃ SCH ₂	H	Ph	CF ₂ Cl	B24
A471	CH ₃ SOCH ₂	H	Ph	CF ₂ Cl	B24
A472	CH ₃ SO ₂ CH ₂	H	Ph	CF ₂ Cl	B24
A473	H	H	Ph	CHF ₂	B24
A474	CH ₃	H	Ph	CHF ₂	B24
A475	CH ₃ CH ₂	H	Ph	CHF ₂	B24
A476	cyclopropyl	H	Ph	CHF ₂	B24
A477	(CH ₃) ₃ C	H	Ph	CHF ₂	B24
A478	(CH ₃) ₂ CH	H	Ph	CHF ₂	B24
A479	CH ₃ (CH ₂) ₂	H	Ph	CHF ₂	B24
A480	CH ₃ OCH ₂	H	Ph	CHF ₂	B24
A481	CH ₃ O(CH ₂) ₂	H	Ph	CHF ₂	B24
A482	Ph	H	Ph	CHF ₂	B24
A483	PhO	H	Ph	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A484	PhS	H	Ph	CHF ₂	B24
A485	PhSO	H	Ph	CHF ₂	B24
A486	PhSO ₂	H	Ph	CHF ₂	B24
A487	CH ₃ S	H	Ph	CHF ₂	B24
A488	CH ₃ SO	H	Ph	CHF ₂	B24
A489	CF ₃	H	Ph	CHF ₂	B24
A490	F ₂ CH	H	Ph	CHF ₂	B24
A491	HCC	H	Ph	CHF ₂	B24
A492	CH ₃ CC	H	Ph	CHF ₂	B24
A493	CH ₂ =CH	H	Ph	CHF ₂	B24
A494	CH ₂ =CHCH ₂	H	Ph	CHF ₂	B24
A495	CH ₃ SO ₂ N(CH ₃)	H	Ph	CHF ₂	B24
A496	(CH ₃) ₂ N	H	Ph	CHF ₂	B24
A497	(CH ₃) ₂ NSO ₂	H	Ph	CHF ₂	B24
A498	ClCH ₂	H	Ph	CHF ₂	B24
A499	CH ₃ SCH ₂	H	Ph	CHF ₂	B24
A500	CH ₃ SOCH ₂	H	Ph	CHF ₂	B24
A501	CH ₃ SO ₂ CH ₂	H	Ph	CHF ₂	B24
A502	H	H	Ph	CCl ₃	B24
A503	CH ₃	H	Ph	CCl ₃	B24
A504	CH ₃ CH ₂	H	Ph	CCl ₃	B24
A505	cyclopropyl	H	Ph	CCl ₃	B24
A506	(CH ₃) ₃ C	H	Ph	CCl ₃	B24
A507	(CH ₃) ₂ CH	H	Ph	CCl ₃	B24
A508	CH ₃ (CH ₂) ₂	H	Ph	CCl ₃	B24
A509	CH ₃ OCH ₂	H	Ph	CCl ₃	B24
A510	CH ₃ O(CH ₂) ₂	H	Ph	CCl ₃	B24
A511	Ph	H	Ph	CCl ₃	B24
A512	PhO	H	Ph	CCl ₃	B24
A513	PhS	H	Ph	CCl ₃	B24
A514	PhSO	H	Ph	CCl ₃	B24
A515	PhSO ₂	H	Ph	CCl ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A516	CH ₃ S	H	Ph	CCl ₃	B24
A517	CH ₃ SO	H	Ph	CCl ₃	B24
A518	CF ₃	H	Ph	CCl ₃	B24
A519	F ₂ CH	H	Ph	CCl ₃	B24
A520	HCC	H	Ph	CCl ₃	B24
A521	CH ₃ CC	H	Ph	CCl ₃	B24
A522	CH ₂ =CH	H	Ph	CCl ₃	B24
A523	CH ₂ =CHCH ₂	H	Ph	CCl ₃	B24
A524	CH ₃ SO ₂ N(CH ₃)	H	Ph	CCl ₃	B24
A525	(CH ₃) ₂ N	H	Ph	CCl ₃	B24
A526	(CH ₃) ₂ NSO ₂	H	Ph	CCl ₃	B24
A527	ClCH ₂	H	Ph	CCl ₃	B24
A528	CH ₃ SCH ₂	H	Ph	CCl ₃	B24
A529	CH ₃ SOCH ₂	H	Ph	CCl ₃	B24
A530	CH ₃ SO ₂ CH ₂	H	Ph	CCl ₃	B24
A531	H	CH ₃	H	CF ₃	B24
A532	H	CH ₃ CH ₂	H	CF ₃	B24
A533	H	cyclopropyl	H	CF ₃	B24
A534	H	(CH ₃) ₃ CH	H	CF ₃	B24
A535	H	(CH ₃) ₂ CH	H	CF ₃	B24
A536	H	CH ₃ (CH ₂) ₂	H	CF ₃	B24
A537	H	CH ₃ OCH ₂	H	CF ₃	B24
A538	H	CH ₃ O(CH ₂) ₂	H	CF ₃	B24
A539	H	Ph	H	CF ₃	B24
A540	H	PhO	H	CF ₃	B24
A541	H	PhS	H	CF ₃	B24
A542	H	PhSO	H	CF ₃	B24
A543	H	PhSO ₂	H	CF ₃	B24
A544	H	CH ₃ S	H	CF ₃	B24
A545	H	CH ₃ SO	H	CF ₃	B24
A546	H	CF ₃	H	CF ₃	B24
A547	H	F ₂ CH	H	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A548	H	HCC	H	CF ₃	B24
A549	H	CH ₃ CC	H	CF ₃	B24
A550	H	CH ₂ =CH	H	CF ₃	B24
A551	H	CH ₂ =CHCH ₂	H	CF ₃	B24
A552	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃	B24
A553	H	(CH ₃) ₂ N	H	CF ₃	B24
A554	H	(CH ₃) ₂ NSO ₂	H	CF ₃	B24
A555	H	CH ₃ SCH ₂	H	CF ₃	B24
A556	H	CH ₃ SOCH ₂	H	CF ₃	B24
A557	H	CH ₃ SO ₂ CH ₂	H	CF ₃	B24
A558	H	CH ₃	H	CF ₃ CF ₂	B24
A559	H	CH ₃ CH ₂	H	CF ₃ CF ₂	B24
A560	H	cyclopropyl	H	CF ₃ CF ₂	B24
A561	H	(CH ₃) ₃ C	H	CF ₃ CF ₂	B24
A562	H	(CH ₃) ₂ CH	H	CF ₃ CF ₂	B24
A563	H	CH ₃ (CH ₂) ₂	H	CF ₃ CF ₂	B24
A564	H	CH ₃ OCH ₂	H	CF ₃ CF ₂	B24
A565	H	CH ₃ O(CH ₂) ₂	H	CF ₃ CF ₂	B24
A566	H	Ph	H	CF ₃ CF ₂	B24
A567	H	PhO	H	CF ₃ CF ₂	B24
A568	H	PhS	H	CF ₃ CF ₂	B24
A569	H	PhSO	H	CF ₃ CF ₂	B24
A570	H	PhSO ₂	H	CF ₃ CF ₂	B24
A571	H	CH ₃ S	H	CF ₃ CF ₂	B24
A572	H	CH ₃ SO	H	CF ₃ CF ₂	B24
A573	H	CF ₃	H	CF ₃ CF ₂	B24
A574	H	F ₂ CH	H	CF ₃ CF ₂	B24
A575	H	HCC	H	CF ₃ CF ₂	B24
A576	H	CH ₃ CC	H	CF ₃ CF ₂	B24
A577	H	CH ₂ =CH	H	CF ₃ CF ₂	B24
A578	H	CH ₂ =CHCH ₂	H	CF ₃ CF ₂	B24
A579	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A580	H	(CH ₃) ₂ N	H	CF ₃ CF ₂	B24
A581	H	(CH ₃) ₂ NSO ₂	H	CF ₃ CF ₂	B24
A582	H	CH ₃ SCH ₂	H	CF ₃ CF ₂	B24
A583	H	CH ₃ SOCH ₂	H	CF ₃ CF ₂	B24
A584	H	CH ₃ SO ₂ CH ₂	H	CF ₃ CF ₂	B24
A585	H	CH ₃	H	CF ₃ CF ₂ CF ₂	B24
A586	H	CH ₃ CH ₂	H	CF ₃ CF ₂ CF ₂	B24
A587	H	cyclopropyl	H	CF ₃ CF ₂ CF ₂	B24
A588	H	(CH ₃) ₃ C	H	CF ₃ CF ₂ CF ₂	B24
A589	H	(CH ₃) ₂ CH	H	CF ₃ CF ₂ CF ₂	B24
A590	H	CH ₃ (CH ₂) ₂	H	CF ₃ CF ₂ CF ₂	B24
A591	H	CH ₃ OCH ₂	H	CF ₃ CF ₂ CF ₂	B24
A592	H	CH ₃ O(CH ₂) ₂	H	CF ₃ CF ₂ CF ₂	B24
A593	H	Ph	H	CF ₃ CF ₂ CF ₂	B24
A594	H	PhO	H	CF ₃ CF ₂ CF ₂	B24
A595	H	PhS	H	CF ₃ CF ₂ CF ₂	B24
A596	H	PhSO	H	CF ₃ CF ₂ CF ₂	B24
A597	H	PhSO ₂	H	CF ₃ CF ₂ CF ₂	B24
A598	H	CH ₃ S	H	CF ₃ CF ₂ CF ₂	B24
A599	H	CH ₃ SO	H	CF ₃ CF ₂ CF ₂	B24
A600	H	CF ₃	H	CF ₃ CF ₂ CF ₂	B24
A601	H	F ₂ CH	H	CF ₃ CF ₂ CF ₂	B24
A602	H	HCC	H	CF ₃ CF ₂ CF ₂	B24
A603	H	CH ₃ CC	H	CF ₃ CF ₂ CF ₂	B24
A604	H	CH ₂ =CH	H	CF ₃ CF ₂ CF ₂	B24
A605	H	CH ₂ =CHCH ₂	H	CF ₃ CF ₂ CF ₂	B24
A606	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₃ CF ₂ CF ₂	B24
A607	H	(CH ₃) ₂ N	H	CF ₃ CF ₂ CF ₂	B24
A608	H	(CH ₃) ₂ NSO ₂	H	CF ₃ CF ₂ CF ₂	B24
A609	H	CH ₃ SCH ₂	H	CF ₃ CF ₂ CF ₂	B24
A610	H	CH ₃ SOCH ₂	H	CF ₃ CF ₂ CF ₂	B24
A611	H	CH ₃ SO ₂ CH ₂	H	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A612	H	CH ₃	H	CF ₂ Cl	B24
A613	H	CH ₃ CH ₂	H	CF ₂ Cl	B24
A614	H	cyclopropyl	H	CF ₂ Cl	B24
A615	H	(CH ₃) ₃ C	H	CF ₂ Cl	B24
A616	H	(CH ₃) ₂ CH	H	CF ₂ Cl	B24
A617	H	CH ₃ (CH ₂) ₂	H	CF ₂ Cl	B24
A618	H	CH ₃ OCH ₂	H	CF ₂ Cl	B24
A619	H	CH ₃ O(CH ₂) ₂	H	CF ₂ Cl	B24
A620	H	Ph	H	CF ₂ Cl	B24
A621	H	PhO	H	CF ₂ Cl	B24
A622	H	PhS	H	CF ₂ Cl	B24
A623	H	PhSO	H	CF ₂ Cl	B24
A624	H	PhSO ₂	H	CF ₂ Cl	B24
A625	H	CH ₃ S	H	CF ₂ Cl	B24
A626	H	CH ₃ SO	H	CF ₂ Cl	B24
A627	H	CF ₃	H	CF ₂ Cl	B24
A628	H	F ₂ CH	H	CF ₂ Cl	B24
A629	H	HCC	H	CF ₂ Cl	B24
A630	H	CH ₃ CC	H	CF ₂ Cl	B24
A631	H	CH ₂ =CH	H	CF ₂ Cl	B24
A632	H	CH ₂ =CHCH ₂	H	CF ₂ Cl	B24
A633	H	CH ₃ SO ₂ N(CH ₃)	H	CF ₂ Cl	B24
A634	H	(CH ₃) ₂ N	H	CF ₂ Cl	B24
A635	H	(CH ₃) ₂ NSO ₂	H	CF ₂ Cl	B24
A636	H	CH ₃ SCH ₂	H	CF ₂ Cl	B24
A637	H	CH ₃ SOCH ₂	H	CF ₂ Cl	B24
A638	H	CH ₃ SO ₂ CH ₂	H	CF ₂ Cl	B24
A639	H	CH ₃	H	CHF ₂	B24
A640	H	CH ₃ CH ₂	H	CHF ₂	B24
A641	H	cyclopropyl	H	CHF ₂	B24
A642	H	(CH ₃) ₃ C	H	CHF ₂	B24
A643	H	(CH ₃) ₂ CH	H	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A644	H	CH ₃ (CH ₂) ₂	H	CHF ₂	B24
A645	H	CH ₃ OCH ₂	H	CHF ₂	B24
A646	H	CH ₃ O(CH ₂) ₂	H	CHF ₂	B24
A647	H	Ph	H	CHF ₂	B24
A648	H	PhO	H	CHF ₂	B24
A649	H	PhS	H	CHF ₂	B24
A650	H	PhSO	H	CHF ₂	B24
A651	H	PhSO ₂	H	CHF ₂	B24
A652	H	CH ₃ S	H	CHF ₂	B24
A653	H	CH ₃ SO	H	CHF ₂	B24
A654	H	CF ₃	H	CHF ₂	B24
A655	H	F ₂ CH	H	CHF ₂	B24
A656	H	HCC	H	CHF ₂	B24
A657	H	CH ₃ CC	H	CHF ₂	B24
A658	H	CH ₂ =CH	H	CHF ₂	B24
A659	H	CH ₂ =CHCH ₂	H	CHF ₂	B24
A660	H	CH ₃ SO ₂ N(CH ₃)	H	CHF ₂	B24
A661	H	(CH ₃) ₂ N	H	CHF ₂	B24
A662	H	(CH ₃) ₂ NSO ₂	H	CHF ₂	B24
A663	H	CH ₃ SCH ₂	H	CHF ₂	B24
A664	H	CH ₃ SOCH ₂	H	CHF ₂	B24
A665	H	CH ₃ SO ₂ CH ₂	H	CHF ₂	B24
A666	H	CH ₃	H	CCl ₃	B24
A667	H	CH ₃ CH ₂	H	CCl ₃	B24
A668	H	cyclopropyl	H	CCl ₃	B24
A669	H	(CH ₃) ₃ C	H	CCl ₃	B24
A670	H	(CH ₃) ₂ CH	H	CCl ₃	B24
A671	H	CH ₃ (CH ₂) ₂	H	CCl ₃	B24
A672	H	CH ₃ OCH ₂	H	CCl ₃	B24
A673	H	CH ₃ O(CH ₂) ₂	H	CCl ₃	B24
A674	H	Ph	H	CCl ₃	B24
A675	H	PhO	H	CCl ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A676	H	PhS	H	CCl ₃	B24
A677	H	PhSO	H	CCl ₃	B24
A678	H	PhSO ₂	H	CCl ₃	B24
A679	H	CH ₃ S	H	CCl ₃	B24
A680	H	CH ₃ SO	H	CCl ₃	B24
A681	H	CF ₃	H	CCl ₃	B24
A682	H	F ₂ CH	H	CCl ₃	B24
A683	H	HCC	H	CCl ₃	B24
A684	H	CH ₃ CC	H	CCl ₃	B24
A685	H	CH ₂ =CH	H	CCl ₃	B24
A686	H	CH ₂ =CHCH ₂	H	CCl ₃	B24
A687	H	CH ₃ SO ₂ N(CH ₃)	H	CCl ₃	B24
A688	H	(CH ₃) ₂ N	H	CCl ₃	B24
A689	H	(CH ₃) ₂ NSO ₂	H	CCl ₃	B24
A690	H	CH ₃ SCH ₂	H	CCl ₃	B24
A691	H	CH ₃ SOCH ₂	H	CCl ₃	B24
A692	H	CH ₃ SO ₂ CH ₂	H	CCl ₃	B24
A693	H	CH ₃	CH ₃	CF ₃	B24
A694	H	CH ₃ CH ₂	CH ₃	CF ₃	B24
A695	H	cyclopropyl	CH ₃	CF ₃	B24
A696	H	(CH ₃) ₃ C	CH ₃	CF ₃	B24
A697	H	(CH ₃) ₂ CH	CH ₃	CF ₃	B24
A698	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃	B24
A699	H	CH ₃ OCH ₂	CH ₃	CF ₃	B24
A700	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃	B24
A701	H	Ph	CH ₃	CF ₃	B24
A702	H	PhO	CH ₃	CF ₃	B24
A703	H	PhS	CH ₃	CF ₃	B24
A704	H	PhSO	CH ₃	CF ₃	B24
A705	H	PhSO ₂	CH ₃	CF ₃	B24
A706	H	CH ₃ S	CH ₃	CF ₃	B24
A707	H	CH ₃ SO	CH ₃	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A708	H	CF ₃	CH ₃	CF ₃	B24
A709	H	F ₂ CH	CH ₃	CF ₃	B24
A710	H	HCC	CH ₃	CF ₃	B24
A711	H	CH ₃ CC	CH ₃	CF ₃	B24
A712	H	CH ₂ =CH	CH ₃	CF ₃	B24
A713	H	CH ₂ =CHCH ₂	CH ₃	CF ₃	B24
A714	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃	B24
A715	H	(CH ₃) ₂ N	CH ₃	CF ₃	B24
A716	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃	B24
A717	H	CH ₃ SCH ₂	CH ₃	CF ₃	B24
A718	H	CH ₃ SOCH ₂	CH ₃	CF ₃	B24
A719	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃	B24
A720	H	CH ₃	CH ₃	CF ₃ CF ₂	B24
A721	H	CH ₃ CH ₂	CH ₃	CF ₃ CF ₂	B24
A722	H	cyclopropyl	CH ₃	CF ₃ CF ₂	B24
A723	H	(CH ₃) ₃ C	CH ₃	CF ₃ CF ₂	B24
A724	H	(CH ₃) ₂ CH	CH ₃	CF ₃ CF ₂	B24
A725	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃ CF ₂	B24
A726	H	CH ₃ OCH ₂	CH ₃	CF ₃ CF ₂	B24
A727	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃ CF ₂	B24
A728	H	Ph	CH ₃	CF ₃ CF ₂	B24
A729	H	PhO	CH ₃	CF ₃ CF ₂	B24
A730	H	PhS	CH ₃	CF ₃ CF ₂	B24
A731	H	PhSO	CH ₃	CF ₃ CF ₂	B24
A732	H	PhSO ₂	CH ₃	CF ₃ CF ₂	B24
A733	H	CH ₃ S	CH ₃	CF ₃ CF ₂	B24
A734	H	CH ₃ SO	CH ₃	CF ₃ CF ₂	B24
A735	H	CF ₃	CH ₃	CF ₃ CF ₂	B24
A736	H	F ₂ CH	CH ₃	CF ₃ CF ₂	B24
A737	H	HCC	CH ₃	CF ₃ CF ₂	B24
A738	H	CH ₃ CC	CH ₃	CF ₃ CF ₂	B24
A739	H	CH ₂ =CH	CH ₃	CF ₃ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A740	H	CH ₂ =CHCH ₂	CH ₃	CF ₃ CF ₂	B24
A741	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃ CF ₂	B24
A742	H	(CH ₃) ₂ N	CH ₃	CF ₃ CF ₂	B24
A743	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃ CF ₂	B24
A744	H	CH ₃ SCH ₂	CH ₃	CF ₃ CF ₂	B24
A745	H	CH ₃ SOCH ₂	CH ₃	CF ₃ CF ₂	B24
A746	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃ CF ₂	B24
A747	H	CH ₃	CH ₃	CF ₃ CF ₂ CF ₂	B24
A748	H	CH ₃ CH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A749	H	cyclopropyl	CH ₃	CF ₃ CF ₂ CF ₂	B24
A750	H	(CH ₃) ₃ C	CH ₃	CF ₃ CF ₂ CF ₂	B24
A751	H	(CH ₃) ₂ CH	CH ₃	CF ₃ CF ₂ CF ₂	B24
A752	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A753	H	CH ₃ OCH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A754	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A755	H	Ph	CH ₃	CF ₃ CF ₂ CF ₂	B24
A756	H	PhO	CH ₃	CF ₃ CF ₂ CF ₂	B24
A757	H	PhS	CH ₃	CF ₃ CF ₂ CF ₂	B24
A758	H	PhSO	CH ₃	CF ₃ CF ₂ CF ₂	B24
A759	H	PhSO ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A760	H	CH ₃ S	CH ₃	CF ₃ CF ₂ CF ₂	B24
A761	H	CH ₃ SO	CH ₃	CF ₃ CF ₂ CF ₂	B24
A762	H	CF ₃	CH ₃	CF ₃ CF ₂ CF ₂	B24
A763	H	F ₂ CH	CH ₃	CF ₃ CF ₂ CF ₂	B24
A764	H	HCC	CH ₃	CF ₃ CF ₂ CF ₂	B24
A765	H	CH ₃ CC	CH ₃	CF ₃ CF ₂ CF ₂	B24
A766	H	CH ₂ =CH	CH ₃	CF ₃ CF ₂ CF ₂	B24
A767	H	CH ₂ =CHCH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A768	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₃ CF ₂ CF ₂	B24
A769	H	(CH ₃) ₂ N	CH ₃	CF ₃ CF ₂ CF ₂	B24
A770	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A771	H	CH ₃ SCH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A772	H	CH ₃ SOCH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A773	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₃ CF ₂ CF ₂	B24
A774	H	CH ₃	CH ₃	CF ₂ Cl	B24
A775	H	CH ₃ CH ₂	CH ₃	CF ₂ Cl	B24
A776	H	cyclopropyl	CH ₃	CF ₂ Cl	B24
A777	H	(CH ₃) ₃ C	CH ₃	CF ₂ Cl	B24
A778	H	(CH ₃) ₂ CH	CH ₃	CF ₂ Cl	B24
A779	H	CH ₃ (CH ₂) ₂	CH ₃	CF ₂ Cl	B24
A780	H	CH ₃ OCH ₂	CH ₃	CF ₂ Cl	B24
A781	H	CH ₃ O(CH ₂) ₂	CH ₃	CF ₂ Cl	B24
A782	H	Ph	CH ₃	CF ₂ Cl	B24
A783	H	PhO	CH ₃	CF ₂ Cl	B24
A784	H	PhS	CH ₃	CF ₂ Cl	B24
A785	H	PhSO	CH ₃	CF ₂ Cl	B24
A786	H	PhSO ₂	CH ₃	CF ₂ Cl	B24
A787	H	CH ₃ S	CH ₃	CF ₂ Cl	B24
A788	H	CH ₃ SO	CH ₃	CF ₂ Cl	B24
A789	H	CF ₃	CH ₃	CF ₂ Cl	B24
A790	H	F ₂ CH	CH ₃	CF ₂ Cl	B24
A791	H	HCC	CH ₃	CF ₂ Cl	B24
A792	H	CH ₃ CC	CH ₃	CF ₂ Cl	B24
A793	H	CH ₂ =CH	CH ₃	CF ₂ Cl	B24
A794	H	CH ₂ =CHCH ₂	CH ₃	CF ₂ Cl	B24
A795	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CF ₂ Cl	B24
A796	H	(CH ₃) ₂ N	CH ₃	CF ₂ Cl	B24
A797	H	(CH ₃) ₂ NSO ₂	CH ₃	CF ₂ Cl	B24
A798	H	CH ₃ SCH ₂	CH ₃	CF ₂ Cl	B24
A799	H	CH ₃ SOCH ₂	CH ₃	CF ₂ Cl	B24
A800	H	CH ₃ SO ₂ CH ₂	CH ₃	CF ₂ Cl	B24
A801	H	CH ₃	CH ₃	CHF ₂	B24
A802	H	CH ₃ CH ₂	CH ₃	CHF ₂	B24
A803	H	cyclopropyl	CH ₃	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A804	H	(CH ₃) ₃ C	CH ₃	CHF ₂	B24
A805	H	(CH ₃) ₂ CH	CH ₃	CHF ₂	B24
A806	H	CH ₃ (CH ₂) ₂	CH ₃	CHF ₂	B24
A807	H	CH ₃ OCH ₂	CH ₃	CHF ₂	B24
A808	H	CH ₃ O(CH ₂) ₂	CH ₃	CHF ₂	B24
A809	H	Ph	CH ₃	CHF ₂	B24
A810	H	PhO	CH ₃	CHF ₂	B24
A811	H	PhS	CH ₃	CHF ₂	B24
A812	H	PhSO	CH ₃	CHF ₂	B24
A813	H	PhSO ₂	CH ₃	CHF ₂	B24
A814	H	CH ₃ S	CH ₃	CHF ₂	B24
A815	H	CH ₃ SO	CH ₃	CHF ₂	B24
A816	H	CF ₃	CH ₃	CHF ₂	B24
A817	H	F ₂ CH	CH ₃	CHF ₂	B24
A818	H	HCC	CH ₃	CHF ₂	B24
A819	H	CH ₃ CC	CH ₃	CHF ₂	B24
A820	H	CH ₂ =CH	CH ₃	CHF ₂	B24
A821	H	CH ₂ =CHCH ₂	CH ₃	CHF ₂	B24
A822	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CHF ₂	B24
A823	H	(CH ₃) ₂ N	CH ₃	CHF ₂	B24
A824	H	(CH ₃) ₂ NSO ₂	CH ₃	CHF ₂	B24
A825	H	CH ₃ SCH ₂	CH ₃	CHF ₂	B24
A826	H	CH ₃ SOCH ₂	CH ₃	CHF ₂	B24
A827	H	CH ₃ SO ₂ CH ₂	CH ₃	CHF ₂	B24
A828	H	CH ₃	CH ₃	CCl ₃	B24
A829	H	CH ₃ CH ₂	CH ₃	CCl ₃	B24
A830	H	cyclopropyl	CH ₃	CCl ₃	B24
A831	H	(CH ₃) ₃ C	CH ₃	CCl ₃	B24
A832	H	(CH ₃) ₂ CH	CH ₃	CCl ₃	B24
A833	H	CH ₃ (CH ₂) ₂	CH ₃	CCl ₃	B24
A834	H	CH ₃ OCH ₂	CH ₃	CCl ₃	B24
A835	H	CH ₃ O(CH ₂) ₂	CH ₃	CCl ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A836	H	Ph	CH ₃	CCl ₃	B24
A837	H	PhO	CH ₃	CCl ₃	B24
A838	H	PhS	CH ₃	CCl ₃	B24
A839	H	PhSO	CH ₃	CCl ₃	B24
A840	H	PhSO ₂	CH ₃	CCl ₃	B24
A841	H	CH ₃ S	CH ₃	CCl ₃	B24
A842	H	CH ₃ SO	CH ₃	CCl ₃	B24
A843	H	CF ₃	CH ₃	CCl ₃	B24
A844	H	F ₂ CH	CH ₃	CCl ₃	B24
A845	H	HCC	CH ₃	CCl ₃	B24
A846	H	CH ₃ CC	CH ₃	CCl ₃	B24
A847	H	CH ₂ =CH	CH ₃	CCl ₃	B24
A848	H	CH ₂ =CHCH ₂	CH ₃	CCl ₃	B24
A849	H	CH ₃ SO ₂ N(CH ₃)	CH ₃	CCl ₃	B24
A850	H	(CH ₃) ₂ N	CH ₃	CCl ₃	B24
A851	H	(CH ₃) ₂ NSO ₂	CH ₃	CCl ₃	B24
A852	H	CH ₃ SCH ₂	CH ₃	CCl ₃	B24
A853	H	CH ₃ SOCH ₂	CH ₃	CCl ₃	B24
A854	H	CH ₃ SO ₂ CH ₂	CH ₃	CCl ₃	B24
A855	H	CH ₃	Ph	CF ₃	B24
A856	H	CH ₃ CH ₂	Ph	CF ₃	B24
A857	H	(CH ₃) ₂ CH	Ph	CF ₃	B24
A858	H	(CH ₃) ₂ CH	Ph	CF ₃	B24
A859	H	cyclopropyl	Ph	CF ₃	B24
A860	H	CH ₃ (CH ₂) ₂	Ph	CF ₃	B24
A861	H	CH ₃ OCH ₂	Ph	CF ₃	B24
A862	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃	B24
A863	H	Ph	Ph	CF ₃	B24
A864	H	PhO	Ph	CF ₃	B24
A865	H	PhS	Ph	CF ₃	B24
A866	H	PhSO	Ph	CF ₃	B24
A867	H	PhSO ₂	Ph	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A868	H	CH ₃ S	Ph	CF ₃	B24
A869	H	CH ₃ SO	Ph	CF ₃	B24
A870	H	CF ₃	Ph	CF ₃	B24
A871	H	F ₂ CH	Ph	CF ₃	B24
A872	H	HCC	Ph	CF ₃	B24
A873	H	CH ₃ CC	Ph	CF ₃	B24
A874	H	CH ₂ =CH	Ph	CF ₃	B24
A875	H	CH ₂ =CHCH ₂	Ph	CF ₃	B24
A876	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃	B24
A877	H	(CH ₃) ₂ N	Ph	CF ₃	B24
A878	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃	B24
A879	H	CH ₃ SCH ₂	Ph	CF ₃	B24
A880	H	CH ₃ SOCH ₂	Ph	CF ₃	B24
A881	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃	B24
A882	H	CH ₃	Ph	CF ₃ CF ₂	B24
A883	H	CH ₃ CH ₂	Ph	CF ₃ CF ₂	B24
A884	H	cyclopropyl	Ph	CF ₃ CF ₂	B24
A885	H	(CH ₃) ₃ C	Ph	CF ₃ CF ₂	B24
A886	H	(CH ₃) ₂ CH	Ph	CF ₃ CF ₂	B24
A887	H	CH ₃ (CH ₂) ₂	Ph	CF ₃ CF ₂	B24
A888	H	CH ₃ OCH ₂	Ph	CF ₃ CF ₂	B24
A889	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃ CF ₂	B24
A890	H	Ph	Ph	CF ₃ CF ₂	B24
A891	H	PhO	Ph	CF ₃ CF ₂	B24
A892	H	PhS	Ph	CF ₃ CF ₂	B24
A893	H	PhSO	Ph	CF ₃ CF ₂	B24
A894	H	PhSO ₂	Ph	CF ₃ CF ₂	B24
A895	H	CH ₃ S	Ph	CF ₃ CF ₂	B24
A896	H	CH ₃ SO	Ph	CF ₃ CF ₂	B24
A897	H	CF ₃	Ph	CF ₃ CF ₂	B24
A898	H	F ₂ CH	Ph	CF ₃ CF ₂	B24
A899	H	HCC	Ph	CF ₃ CF ₂	B24

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Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A900	H	CH ₃ CC	Ph	CF ₃ CF ₂	B24
A901	H	CH ₂ =CH	Ph	CF ₃ CF ₂	B24
A902	H	CH ₂ =CHCH ₂	Ph	CF ₃ CF ₂	B24
A903	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃ CF ₂	B24
A904	H	(CH ₃) ₂ N	Ph	CF ₃ CF ₂	B24
A905	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃ CF ₂	B24
A906	H	CH ₃ SCH ₂	Ph	CF ₃ CF ₂	B24
A907	H	CH ₃ SOCH ₂	Ph	CF ₃ CF ₂	B24
A908	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃ CF ₂	B24
A909	H	CH ₃	Ph	CF ₃ CF ₂ CF ₂	B24
A910	H	CH ₃ CH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A911	H	cyclopropyl	Ph	CF ₃ CF ₂ CF ₂	B24
A912	H	(CH ₃) ₃ C	Ph	CF ₃ CF ₂ CF ₂	B24
A913	H	(CH ₃) ₂ CH	Ph	CF ₃ CF ₂ CF ₂	B24
A914	H	CH ₃ (CH ₂) ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A915	H	CH ₃ OCH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A916	H	CH ₃ O(CH ₂) ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A917	H	Ph	Ph	CF ₃ CF ₂ CF ₂	B24
A918	H	PhO	Ph	CF ₃ CF ₂ CF ₂	B24
A919	H	PhS	Ph	CF ₃ CF ₂ CF ₂	B24
A920	H	PhSO	Ph	CF ₃ CF ₂ CF ₂	B24
A921	H	PhSO ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A922	H	CH ₃ S	Ph	CF ₃ CF ₂ CF ₂	B24
A923	H	CH ₃ SO	Ph	CF ₃ CF ₂ CF ₂	B24
A924	H	CF ₃	Ph	CF ₃ CF ₂ CF ₂	B24
A925	H	F ₂ CH	Ph	CF ₃ CF ₂ CF ₂	B24
A926	H	HCC	Ph	CF ₃ CF ₂ CF ₂	B24
A927	H	CH ₃ CC	Ph	CF ₃ CF ₂ CF ₂	B24
A928	H	CH ₂ =CH	Ph	CF ₃ CF ₂ CF ₂	B24
A929	H	CH ₂ =CHCH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A930	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₃ CF ₂ CF ₂	B24
A931	H	(CH ₃) ₂ N	Ph	CF ₃ CF ₂ CF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A932	H	(CH ₃) ₂ NSO ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A933	H	CH ₃ SCH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A934	H	CH ₃ SOCH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A935	H	CH ₃ SO ₂ CH ₂	Ph	CF ₃ CF ₂ CF ₂	B24
A936	H	CH ₃	Ph	CF ₂ Cl	B24
A937	H	CH ₃ CH ₂	Ph	CF ₂ Cl	B24
A938	H	cyclopropyl	Ph	CF ₂ Cl	B24
A939	H	(CH ₃) ₃ C	Ph	CF ₂ Cl	B24
A940	H	(CH ₃) ₂ CH	Ph	CF ₂ Cl	B24
A941	H	CH ₃ (CH ₂) ₂	Ph	CF ₂ Cl	B24
A942	H	CH ₃ OCH ₂	Ph	CF ₂ Cl	B24
A943	H	CH ₃ O(CH ₂) ₂	Ph	CF ₂ Cl	B24
A944	H	Ph	Ph	CF ₂ Cl	B24
A945	H	PhO	Ph	CF ₂ Cl	B24
A946	H	PhS	Ph	CF ₂ Cl	B24
A947	H	PhSO	Ph	CF ₂ Cl	B24
A948	H	PhSO ₂	Ph	CF ₂ Cl	B24
A949	H	CH ₃ S	Ph	CF ₂ Cl	B24
A950	H	CH ₃ SO	Ph	CF ₂ Cl	B24
A951	H	CF ₃	Ph	CF ₂ Cl	B24
A952	H	F ₂ CH	Ph	CF ₂ Cl	B24
A953	H	HCC	Ph	CF ₂ Cl	B24
A954	H	CH ₃ CC	Ph	CF ₂ Cl	B24
A955	H	CH ₂ =CH	Ph	CF ₂ Cl	B24
A956	H	CH ₂ =CHCH ₂	Ph	CF ₂ Cl	B24
A957	H	CH ₃ SO ₂ N(CH ₃)	Ph	CF ₂ Cl	B24
A958	H	(CH ₃) ₂ N	Ph	CF ₂ Cl	B24
A959	H	(CH ₃) ₂ NSO ₂	Ph	CF ₂ Cl	B24
A960	H	CH ₃ SCH ₂	Ph	CF ₂ Cl	B24
A961	H	CH ₃ SOCH ₂	Ph	CF ₂ Cl	B24
A962	H	CH ₃ SO ₂ CH ₂	Ph	CF ₂ Cl	B24
A963	H	CH ₃	Ph	CHF ₂	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A964	H	CH ₃ CH ₂	Ph	CHF ₂	B24
A965	H	(CH ₃) ₃ C	Ph	CHF ₂	B24
A966	H	(CH ₃) ₂ CH	Ph	CHF ₂	B24
A967	H	cyclopropyl	Ph	CHF ₂	B24
A968	H	CH ₃ (CH ₂) ₂	Ph	CHF ₂	B24
A969	H	CH ₃ OCH ₂	Ph	CHF ₂	B24
A970	H	CH ₃ O(CH ₂) ₂	Ph	CHF ₂	B24
A971	H	Ph	Ph	CHF ₂	B24
A972	H	PhO	Ph	CHF ₂	B24
A973	H	PhS	Ph	CHF ₂	B24
A974	H	PhSO	Ph	CHF ₂	B24
A975	H	PhSO ₂	Ph	CHF ₂	B24
A976	H	CH ₃ S	Ph	CHF ₂	B24
A977	H	CH ₃ SO	Ph	CHF ₂	B24
A978	H	CF ₃	Ph	CHF ₂	B24
A979	H	F ₂ CH	Ph	CHF ₂	B24
A980	H	HCC	Ph	CHF ₂	B24
A981	H	CH ₃ CC	Ph	CHF ₂	B24
A982	H	CH ₂ =CH	Ph	CHF ₂	B24
A983	H	CH ₂ =CHCH ₂	Ph	CHF ₂	B24
A984	H	CH ₃ SO ₂ N(CH ₃)	Ph	CHF ₂	B24
A985	H	(CH ₃) ₂ N	Ph	CHF ₂	B24
A986	H	(CH ₃) ₂ NSO ₂	Ph	CHF ₂	B24
A987	H	CH ₃ SCH ₂	Ph	CHF ₂	B24
A988	H	CH ₃ SOCH ₂	Ph	CHF ₂	B24
A989	H	CH ₃ SO ₂ CH ₂	Ph	CHF ₂	B24
A990	H	CH ₃	Ph	CCl ₃	B24
A991	H	CH ₃ CH ₂	Ph	CCl ₃	B24
A992	H	(CH ₃) ₃ C	Ph	CCl ₃	B24
A993	H	(CH ₃) ₂ CH	Ph	CCl ₃	B24
A994	H	cyclopropyl	Ph	CCl ₃	B24
A995	H	CH ₃ (CH ₂) ₂	Ph	CCl ₃	B24

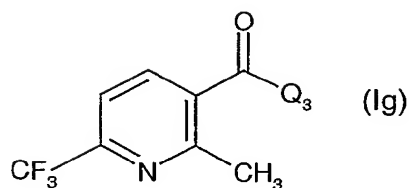
Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A996	H	CH ₃ OCH ₂	Ph	CCl ₃	B24
A997	H	CH ₃ O(CH ₂) ₂	Ph	CCl ₃	B24
A998	H	Ph	Ph	CCl ₃	B24
A999	H	PhO	Ph	CCl ₃	B24
A1000	H	PhS	Ph	CCl ₃	B24
A1001	H	PhSO	Ph	CCl ₃	B24
A1002	H	PhSO ₂	Ph	CCl ₃	B24
A1003	H	CH ₃ S	Ph	CCl ₃	B24
A1004	H	CH ₃ SO	Ph	CCl ₃	B24
A1005	H	CF ₃	Ph	CCl ₃	B24
A1006	H	F ₂ CH	Ph	CCl ₃	B24
A1007	H	HCC	Ph	CCl ₃	B24
A1008	H	CH ₃ CC	Ph	CCl ₃	B24
A1009	H	CH ₂ =CH	Ph	CCl ₃	B24
A1010	H	CH ₂ =CHCH ₂	Ph	CCl ₃	B24
A1011	H	CH ₃ SO ₂ N(CH ₃)	Ph	CCl ₃	B24
A1012	H	(CH ₃) ₂ N	Ph	CCl ₃	B24
A1013	H	(CH ₃) ₂ NSO ₂	Ph	CCl ₃	B24
A1014	H	CH ₃ SCH ₂	Ph	CCl ₃	B24
A1015	H	CH ₃ SOCH ₂	Ph	CCl ₃	B24
A1016	H	CH ₃ SO ₂ CH ₂	Ph	CCl ₃	B24
A1017	F	H	H	CF ₃	B24
A1018	Cl	H	H	CF ₃	B24
A1019	Br	H	H	CF ₃	B24
A1020	CN	H	H	CF ₃	B24
A1021	CH ₃ SO ₂ O	H	H	CF ₃	B24
A1022	CH ₃ O	H	H	CF ₃	B24
A1023	CH ₂ CH ₃ O	H	H	CF ₃	B24
A1024	CH ₂ CH=CH ₂ O	H	H	CF ₃	B24
A1025	HCCCH ₂ O	H	H	CF ₃	B24
A1026	S-benzyl	H	H	CF ₃	B24
A1027	SO ₂ -benzyl	H	H	CF ₃	B24

Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A1028	ClCH ₂	H	H	CF ₃	B24
A1029	BrCH ₂	H	H	CF ₃	B24
A1030	FCH ₂	H	H	CF ₃	B24
A1031	CHF ₂ CH ₂	H	H	CF ₃	B24
A1032	CF ₃ CH ₂	H	H	CF ₃	B24
A1033	triazolylmethyl	H	H	CF ₃	B24
A1034	CHCl ₂ CH ₂	H	H	CF ₃	B24
A1035	ClCH=CH	H	H	CF ₃	B24
A1036	Cl ₂ C=CH	H	H	CF ₃	B24
A1037	CF ₃ CH=CH	H	H	CF ₃	B24
A1038	ClCC	H	H	CF ₃	B24
A1039	Ph	H	H	CF ₃	B24
A1040	CH ₃	CH ₃	H	CF ₃	B24
A1041	CH ₃	OH	H	CF ₃	B24
A1042	CH ₃	F	H	CF ₃	B24
A1043	CH ₃	Cl	H	CF ₃	B24
A1044	F	CH ₃	H	CF ₃	B24
A1045	Cl	CH ₃	H	CF ₃	B24
A1046	H	F	H	CF ₃	B24
A1047	H	Cl	H	CF ₃	B24
A1048	H	Br	H	CF ₃	B24
A1049	H	OH	H	CF ₃	B24
A1050	H	OCH ₃	H	CF ₃	B24
A1051	H	OCHF ₂	H	CF ₃	B24
A1052	H	OSO ₂ CH ₃	H	CF ₃	B24
A1053	H	OSO ₂ CF ₃	H	CF ₃	B24
A1054	H	ClCH ₂	H	CF ₃	B24
A1055	H	BrCH ₂	H	CF ₃	B24
A1056	H	FCH ₂	H	CF ₃	B24
A1057	H	CHF ₂ CH ₂	H	CF ₃	B24
A1058	H	CF ₃ CH ₂	H	CF ₃	B24
A1059	H	triazolylmethyl	H	CF ₃	B24

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Compd. no.	R ₉₂	R ₉₃	R ₉₄	R ₉₅	Q ₃
A1060	H	CHCl ₂ CH ₂	H	CF ₃	B24
A1061	H	ClCH=CH	H	CF ₃	B24
A1062	H	Cl ₂ C=CH	H	CF ₃	B24
A1063	H	CF ₃ CH=CH	H	CF ₃	B24
A1064	H	ClCC	H	CF ₃	B24
A1065	H	CH ₃ C(O)	H	CF ₃	B24
A1066	H	phenyl	H	CF ₃	B24
A1067	H	SO ₂ CH ₃	H	CF ₃	B24
A1068	H	SO ₂ CF ₃	H	CF ₃	B24
A1069	H	CN	H	CF ₃	B24
A1070	H	NO ₂	H	CF ₃	B24
A1071	CH ₃	H	F	CF ₃	B24
A1072	CH ₃	H	Cl	CF ₃	B24
A1073	CH ₃	H	Br	CF ₃	B24
A1074	CH ₃	H	CN	CF ₃	B24
A1075	CH ₃	H	CH ₃ O	CF ₃	B24
A1076	CH ₃	H	CH ₃ S	CF ₃	B24
A1077	CH ₃	H	CH ₃ SO	CF ₃	B24
A1078	CH ₃	H	CH ₃ SO ₂	CF ₃	B24

Table 9a: Compounds of formula Ig:



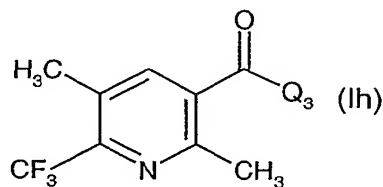
<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 10: Compounds of formula Ih:



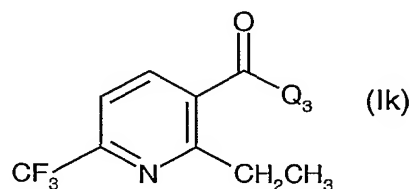
<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 11: Compounds of formula Ik:

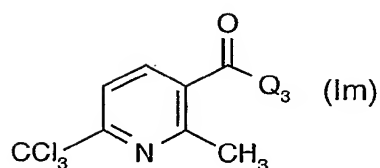


<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 12: Compounds of formula Im:

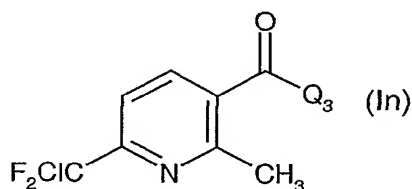


<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 13: Compounds of formula In:



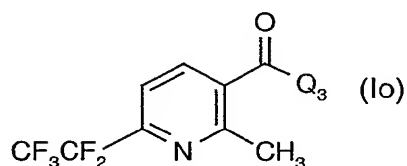
<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 14: Compounds of formula Io:



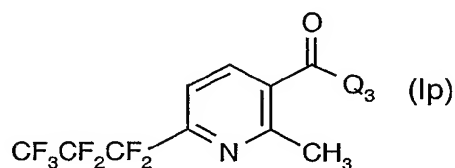
<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 15: Compounds of formula Ip:

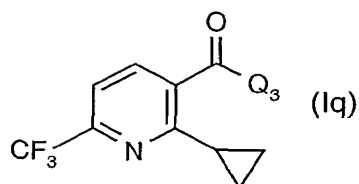


<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

Table 16: Compounds of formula Iq:

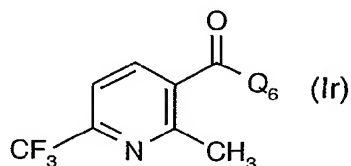


<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12
B13	B14	B15	B16	B17	B18	B19	B20	B21	B22	B23	B24
B25	B26	B27	B28	B29	B30	B31	B32	B33	B34	B35	B36
B37	B38	B39	B40	B41	B42	B43	B44	B45	B46	B47	B48
B49	B50	B51	B52	B53	B54	B55	B56	B57	B58	B59	B60
B61	B62	B63	B64	B65	B66	B67	B68	B69	B70	B71	B72
B73	B74	B75	B76	B77	B78	B79	B80	B81	B82	B83	B84
B85	B86	B87	B88	B89	B90	B91	B92	B93	B94	B95	B96
B97	B98	B99	B100	B101	B102	B103	B104	B105	B106	B107	B108
B109	B110	B111	B112	B113	B114	B115	B116	B117	B118	B119	B120
B121	B122	B123	B124	B125	B126	B127	B128	B129	B130	B131	B132
B133	B134	B135	B136	B137	B138	B139	B140	B141	B142	B143	B144
B145	B146	B147	B148	B149	B150	B151	B152	B153	B154	B155	B156
B157	B158	B159	B160	B161	B162	B163	B164	B165	B166	B167	B168
B169	B170	B171	B172	B173	B174	B175	B176	B177	B178	B179	B180
B181	B182	B183	B184	B185	B186	B187	B188	B189	B190	B191	B192
B193	B194	B195	B196	B197	B198	B199	B200	B201	B202	B203	B204
B205	B206	B207	B208	B209	B210	B211	B212	B213	B214	B215	B216
B217	B218	B219	B220	B221	B222	B223	B224	B225	B226	B227	B228
B229	B230	B231	B232	B233	B234	B235	B236	B237	B238	B239	B240
B241	B242	B243	B244	B245	B246	B247	B248	B249	B250	B251	B252
B253	B254	B255	B256	B257	B258	B259	B260	B261	B262	B263	B264
B265	B266	B267	B268	B269	B270	B271	B272	B273	B274	B275	B276
B277	B278	B279	B280	B281	B282	B283	B284	B285	B286	B287	B288
B289	B290	B291	B292	B293	B294	B295	B296	B297	B298	B299	B300

<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>	<u>Q₃</u>
B301	B302	B303	B304	B305	B306	B307	B308	B309	B310	B311	B312
B313	B314	B315	B316	B317	B318	B319	B320	B321	B322	B323	B324
B325	B326	B327	B328	B329	B330	B331	B332	B333	B334	B335	B336
B337	B338	B339	B340	B341	B342	B343	B344	B345	B346	B347	B348
B349	B350	B351	B352	B353	B354	B355	B356	B357	B358	B359	B360
B361	B362	B363	B364	B365	B366	B367	B368	B369	B370	B371	B372
B373	B374	B375	B376	B377	B378	B379	B380	B381	B382	B383	B384
B385	B386	B387	B388	B389	B390	B391	B392	B393	B394	B395	B396
B397	B398	B399	B400	B401	B402	B403	B404	B405	B406	B407	B408
B409	B410	B411	B412	B413	B414	B415	B416	B417	B418	B419	B420
B421	B422	B423	B424	B425	B426	B427	B428	B429	B430	B431	B432
B433	B434	B435	B436	B437	B438	B439	B440	B441	B442	B443	B444
B445	B446	B447	B448	B449	B450	B451	B452	B453	B454	B455	B456
B457	B458	B459	B460	B461	B462	B463	B464	B465	B466	B467	B468
B469	B470	B471	B472	B473	B474	B475	B476	B477	B478	B479	B480
B481	B482	B483	B484	B485	B486	B487	B488	B489	B490	B491	B492
B493	B494	B495	B496	B497	B498	B499	B500	B501	B502	B503	B504
B505	B506	B507	B508	B509	B510	B511	B512	B513	B514	B515	B516
B517	B518	B519	B520	B521	B522	B523	B524	B525	B526	B527	B528
B529	B530	B531	B532	B533	B534	B535	B536	B537	B538	B539	B540
B541	B542	B543	B544	B545	B546	B547	B548	B549	B550	B551	B552
B553	B554	B555	B556	B557	B558	B559	B560	B561	B562	B563	B564
B565	B566	B567	B568	B569	B570	B571	B572	B573	B574	B575	B576
B577	B578	B579	B580	B581	B582	B583	B584	B585	B586	B587	B588
B589	B590	B591	B592	B593	B594	B595	B596	B597	B598	B599	B600
B601	B602	B603	B604	B605	B606	B607	B608	B609	B610	B611	B612
B613	B614	B615	B616	B617	B618	B619	B620	B621	B622	B623	B624
B625	B626	B627	B628	B629	B630	B631	B632	B633	B634	B635	B636
B637	B638	B639	B640	B641	B642	B643	B644	B645	B646	B647	B648
B649	B650	B651	B652	B653	B654	B655	B656	B657	B658	B659	B660
B661	B662	B663	B664	B665	B666	B667	B668	B669	B670	B671	B672
B773	B774	B775	B776	B777	B778	B779	B780	B781	B782	B783	B784
B785	B786	B787	B788	B789	B790	B791	B792	B793	B794	B795	B796

<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>	<u>Q3</u>
B797	B798	B799	B800	B801	B802	B803	B804	B805	B806	B807	B808
B809	B810	B811	B812	B813	B814	B815	B816	B817	B818	B819	B820
B821	B822	B823	B824	B825	B826	B827	B828	B829	B830	B831	B832
B833	B834	B835	B836	B837	B838	B839	B840	B841	B842	B843	B844
B845	B846	B847	B848	B849	B850	B851	B852	B853	B854	B855	B856
B857	B858	B859	B860	B861	B862	B863	B864	B865	B866	B867	B868
B869	B870	B871	B872	B873	B874	B875	B876	B877	B878	B879	B880
B881	B882	B883	B884	B885	B886	B887	B888	B889	B890	B891	B892
B893	B894	B895	B896	B897	B898	B899	B900	B901	B902	B903	B904
B905	B906	B907	B908	B909	B910	B911	B912	B913	B914	B915	B916
B917	B918	B919	B920	B921	B922	B923	B924	B925	B926	B927	B928
B929	B930	B931	B932	B933	B934	B935	B936	B937	B938	B939	B940
B941	B942	B943	B944	B945	B946	B947	B948	B949	B950	B951	B952
B953	B954	B955	B956	B957	B958	B959	B960	B961	B962	B963	B964
B965	B966	B967	B968	B969	B970	B971	B972	B973	B974	B975	B976
B977	B978	B979	B980	B981	B982	B983	B984	B985	B986	B987	B988
B989	B990	B991	B992	B993	B994	B995	B996	B997	B998	B999	B1000
B1001	B1002	B1003	B1004	B1005	B1006	B1007	B1008	B1009	B1010	B1011	B1012
B1013	B1014	B1015	B1016	B1017	B1018	B1019	B1020	B1021	B1022	B1023	B1024
B1025	B1026	B1027	B1028	B1029	B1030	B1031	B1032	B1033	B1034	B1035	B1036
B1037	B1038	B1039	B1040	B1041	B1042	B1043	B1044	B1045	B1046	B1047	B1048
B1049	B1050	B1051	B1052	B1053	B1054	B1055	B1056	B1057	B1058	B1059	B1060
B1061	B1062	B1063	B1064	B1065	B1066	B1067	B1068	B1069	B1070	B1071	B1072
B1073	B1074	B1075	B1076	B1077	B1078	B1079	B1080	B1081	B1082	B1083	

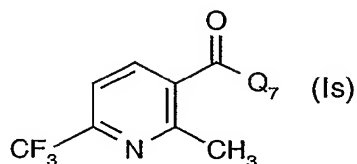
Table 17: Compounds of formula Ir:

[illegible]

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<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>	<u>Q₆</u>
C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
C13	C14	C15	C16	C17	C18	C19	C20	C21	C22	C23	C24
C25	C26	C27	C28	C29	C30	C31	C32	C33	C34	C35	C36
C37	C38	C39	C40	C41	C42	C43	C44	C45	C46	C47	C48
C49	C50	C51	C52	C53	C54	C55	C56	C57	C58	C59	C60
C61	C62	C63	C64	C65	C66	C67	C68	C69	C70	C71	C72
C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84
C85	C86	C87	C88	C89	C90	C91	C92	C93	C94	C95	C96
C97	C98	C99	C100	C101	C102	C103	C104	C105	C106	C107	C108
C109	C110	C111	C112	C113	C114	C115	C116	C117	C118	C119	C120
C121	C122	C123	C124	C125	C126	C127	C128	C129	C130	C131	C132
C133	C134	C135	C136	C137	C138	C139	C140	C141	C142	C143	C144
C145	C146	C147	C148	C149	C150	C151					

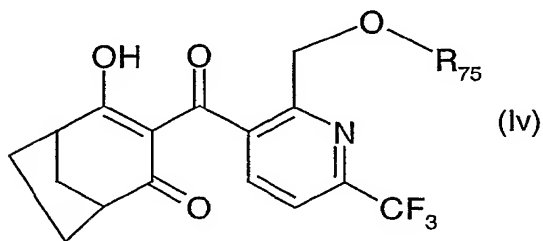
Table 18: Compounds of formula Is:



<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>
D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12
D13	D14	D15	D16	D17	D18	D19	D20	D21	D22	D23	D24
D25	D26	D27	D28	D29	D30	D31	D32	D33	D34	D35	D36
D37	D38	D39	D40	D41	D42	D43	D44	D45	D46	D47	D48
D49	D50	D51	D52	D53	D54	D55	D56	D57	D58	D59	D60
D61	D62	D63	D64	D65	D66	D67	D68	D69	D70	D71	D72
D73	D74	D75	D76	D77	D78	D79	D80	D81	D82	D83	D84
D85	D86	D87	D88	D89	D90	D91	D92	D93	D94	D95	D96
D97	D98	D99	D100	D101	D102	D103	D104	D105	D106	D107	D108
D109	D110	D111	D112	D113	D114	D115	D116	D117	D118	D119	D120

<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>	<u>Q₇</u>
D121	D122	D123	D124	D125	D126	D127	D128	D129	D130	D131	D132
D133	D134	D135	D136	D137	D138	D139	D140				

Table 19: Compounds of formula Iv:



Compd. no.	R ₇₅
E1	CH ₂ OCH ₃
E2	CH ₂ OC ₂ H ₅
E3	CH ₂ O-n-propyl
E4	CH ₂ O-isopropyl
E5	CH ₂ O-n-butyl
E6	CH ₂ O-isobutyl
E7	CH ₂ O-tert-butyl
E8	(CH ₂) ₂ OCH ₃
E9	(CH ₂) ₂ O-ethyl
E10	(CH ₂) ₂ O-n-propyl
E11	(CH ₂) ₂ O-isopropyl
E12	(CH ₂) ₂ O-n-butyl
E13	(CH ₂) ₂ O-isobutyl
E14	(CH ₂) ₂ O-tert-butyl
E15	(CH ₂) ₂ O(CH ₂) ₂ OCH ₃
E16	(CH ₂) ₂ O(CH ₂) ₂ OCH ₃
E17	C ₂ H ₅

Table 20: Physical data for Tables 5 to 19 (figures = m.p. in °C):

Compound	Phys. data	Compound	Phys. data	Compound	Phys. data
A2	150-151	C46	159-161	A2-B1058	88-89
A3	148-149	C91	141-143	A2-B1066	viscous
A4	143-144	C146	99-101	A2-B1067	resinous oil
A5	81-82	C149	148-150	A2-B1069	oil
A6	148-150	A2-B1	90-92	A2-B1069	viscous oil
A7	105-106	A2-B68	120-121	A8-B1	97-98
A8	123-124	A2-B2	resin	A7-B1	oil
A9	73-74	A2-B90	resin	A3-B1	42-44
A10	165-167	A2-B93	95-96	A94-B1	57-58
A15	164-166	A2-B46	61-62 cis-rac	A66-B24	80-82
A17	99-100	A2-B46	83-84 trans-rac	A64-B1	49-51
A26	143-144	A2-B91	resin	A154-B1	94-95
A27	107-108	A2-B1081	oil	A6-B1	123-124
A29	173-174	A2-B1082	resin	A6-B24	oil
A30	178-181	A2-B1083	resin	A34-B1	53-54
A31	209-210	A2-B29	87-88	A2-B25	oil
A32	145-146	A2-B73	resin	A2-B925	oil
A34	170-171	A2-B95	106-107	E8	55-56
A64	134-135	A2-B31	151-153	E17	99-101
A94	134-135	A2-B75	amorphous		
A154	108-110	A2-B24	oil		
B1057	166-167	A2-B5	resin		
B1058	crystalline	A2-C91	resin		
B1061	crystalline	A2-C146	oil		
B1063	crystalline	A2-B112	resin		
B1065	oil	A2-D140	oil		
B1066	150-152	A2-B1057	amorphous		
B1067	122-123	A2-B1063	oil		
B1069	117-118	A2-B1061	oil		
B1070	crystalline	A2-B133	oil		

Compounds of formulae 2.1 and 2.3 to 2.13.c are known by the names imazamox, imazethapyr, imazaquin, imazapyr, dimethenamid, atrazine, terbutylazine, simazine, terbutryn, cyanazine, ametryn, terbumeton, prohexadione calcium, sethoxydim, clethodim, tepraloxydim, flumetsulam, metosulam, pyridate, bromoxynil, ioxynil, sulcotrione, carfentrazone, sulfentrazone, isoxaflutole, glufosinate, primisulfuron, prosulfuron, rimsulfuron, halosulfuron, nicosulfuron, ethoxysulfuron, flazasulfuron and thifensulfuron and are described in the Pesticide Manual, eleventh ed., British Crop Protection Council, 1997 under the entry numbers 412, 415, 414, 413, 240, 34, 692, 651, 693, 168, 20, 691, 595, 648, 146, 49, 339, 495, 626, 88, 425, 664, 112, 665, 436, 382, 589, 613, 644, 389, 519, 287, 325 and 704. The compound of formula 2.13 wherein Y_1 , Y_3 and Y_4 are methine, Y_2 is C-I, R_{74} is COOMe, Y_5 is nitrogen, Y_6 is methyl and Y_7 is methoxy is known by the name iodosulfuron (especially the sodium salt) from AGROW No. 296, 16th January 1998, page 22. The compound of formula 2.13 wherein Y_1 , Y_2 , Y_3 and Y_4 are methine, R_{74} is trifluoromethyl, Y_5 is nitrogen, Y_6 is trifluoromethyl and Y_7 is methoxy is known by the name tritosulfuron and described in DE-A-40 38 430. The compound of formula 2.13 wherein Y_1 is NH-CHO, Y_2 , Y_3 and Y_4 are methine, R_{74} is CONMe₂, Y_5 is methine and Y_6 and Y_7 are methoxy is described, for example, in WO 95/29899.

The S enantiomer of the compound of formula 2.12 is registered under the CAS-Reg. No. [35597-44-5]. The compound of the general formula 2.2, aRS,1'S(-)N-(1'-methyl-2'-methoxyethyl)-N-chloroacetyl-2-ethyl-6-methylaniline, and a compound of the general formula 2.3, (1S,aRS)-2-chloro-N-(2,4-dimethyl-3-thienyl)-N-(2-methoxy-1-methylethyl)-acetamide, are described, for example, in WO 97/34485. The compound of formula 2.9 wherein R_{69} is NO₂ is known by the name mesotrione and is described, for example, in US-A-5 006 158. The compound of formula 2.6 wherein R_{62} is ethoxy, R_{63} is fluorine, Y is methine, R_{64} is methoxycarbonyl, R_{65} is hydrogen and R_{66} is chlorine is known by the name cloransulam, for example from AGROW No. 261, 2nd August 1996, page 21. The compound of formula 2.6 wherein R_{62} is methoxy, R_{63} is hydrogen, Y is C-F, R_{64} is fluorine, R_{65} is hydrogen and R_{66} is fluorine, is known by the name florasulam and described in US-A-5 163 995.

Furthermore, the following compounds of the composition according to the invention are described in the Pesticide Manual, eleventh ed., British Crop Protection Council, 1997:

Compound of formula (name)	Pesticide Manual eleventh ed., Entry No.:
2.14 (metribuzin)	497

Compound of formula (name)	Pesticide Manual eleventh ed., Entry No.:
2.15 (aclonifen)	8
2.16 (glyphosate)	383
2.17 (bentazone)	65
2.18 (pendimethalin)	557
2.19 (dicamba)	210
2.20 (butylate)	100
2.22 (clomazone)	150
2.23 (2,4-D)	192
2.24 (flumiclorac)	340
2.25 (fluthiacet-methyl)	359
2.26 (flurtamone)	356
2.27 (flumioxazin)	341
2.28 (paraquat)	550
2.29 (azafenidin)	37
2.30 (fluthiamid)	51
2.33 (sulfosate)	383
2.34 (asulam)	33
2.35 (norflurazon)	526
2.36 (terbacil)	689
2.37 (thiazopyr)	702
2.38 (dithiopyr)	259
2.39 (hexazinone)	400
2.40 (diuron)	260
2.41 (MCPA)	455
2.42 (mecoprop)	459
2.43 (tebuthiuron)	683

The compound of formula 2.7 wherein R_{67} is hydrogen and its preparation are described in US-A-3 790 571; the compound of formula 2.6 wherein R_{62} is ethoxy, Z is nitrogen, R_{63} is fluorine, R_{64} is chlorine, R_{65} is hydrogen and R_{66} is chlorine is described in US-A-5 498 773. The compound of formula 2.21 and its preparation are described in US-A-5 183 492; the compound of formula 2.22 is described by the name isoxachlortole in AGROW No. 296, 16th January 1998, page 22. The compound of formula 2.31 is described under the name

fentrazamide in The 1997 British Crop Protection Conference - Weeds, Conference Proceedings Vol. 1, 2-8, pages 67 to 72; the compound of formula 2.32 is described under the name JV 485 (isoxapropazol) in The 1997 British Crop Protection Conference - Weeds, Conference Proceedings Vol. 1, 3A-2, pages 93 to 98. The compound of formula 2.44 is known by the name pethoxamid and is described, for example in EP-A-0 206 251. The compound of formula 2.45 is known by the name procarbazon and is described, for example, in EP-A-0 507 171; the compound of formula 2.46 is known by the name fluazolate and is described, for example, in US-A-5 530 126. The compound of formula 2.47 is known by the name cinidon-ethyl and is described, for example, in DE-A-4 037 840. The compound of formula 2.48 is known by the name benzfendizone and is described, for example, in WO 97/08953. The compound of formula 2.49 is known as diflufenzopyr and is described, for example, in EP-A-0 646 315. The compound of formula 2.50 (amicarbazon) and its preparation are disclosed in DD 298 393 and in US-A-5 194 085. The compound of formula 2.51 (flufenpyr-ethyl) is described in Abstracts of Papers American Chemical Society, (2000) Vol. 220, No. Part 1, pp. AGRO 174.

It is extremely surprising that the combination of the active ingredient of formula I with one or more active ingredients selected from formulae 2.1 to 2.51 exceeds the additive effect on the weeds to be controlled that is to be expected in principle, and thus broadens the range of action of the individual active ingredients especially in two respects: Firstly, the rates of application of the individual compounds of formulae 1 and 2.1 to 2.51 are reduced while a good level of action is maintained and, secondly, the composition according to the invention achieves a high level of weed control also in those cases where the individual substances, in the range of low rates of application, have become unusable from the agronomic standpoint. The result is a considerable broadening of the spectrum of weeds and an additional increase in selectivity in respect of the crops of useful plants, as is necessary and desirable in the event of an unintentional overdose of active ingredient. The composition according to the invention, while retaining excellent control of weeds in crops of useful plants, also enables greater flexibility in succeeding crops.

The composition according to the invention can be used against a large number of agronomically important weeds, such as *Stellaria*, *Nasturtium*, *Agrostis*, *Digitaria*, *Avena*, *Setaria*, *Sinapis*, *Lolium*, *Solanum*, *Phaseolus*, *Echinochloa*, *Scirpus*, *Monochoria*, *Sagittaria*, *Bromus*, *Alopecurus*, *Sorghum halepense*, *Rottboellia*, *Cyperus*, *Abutilon*, *Sida*, *Xanthium*,

Amaranthus, Chenopodium, Ipomoea, Chrysanthemum, Galium, Viola and Veronica. The composition according to the invention is suitable for all methods of application conventionally used in agriculture, e.g. pre-emergence application, post-emergence application and seed dressing. The composition according to the invention is suitable especially for controlling weeds in crops of useful plants, such as cereals, rape, sugar beet, sugar cane, plantation crops, rice, maize and soybeans, and also for non-selective weed control.

"Crops" are to be understood to mean also those crops which have been made tolerant to herbicides or classes of herbicides as a result of conventional methods of breeding or genetic engineering.

The composition according to the invention comprises the active ingredient of formula I and the active ingredients of formulae 2.1 to 2.51 in any mixing ratio, but usually has an excess of one component over the others. Generally, the mixing ratios (ratios by weight) of the active ingredient of formula I and the mixing partners of formulae 2.1 to 2.51 are from 1:2000 to 2000:1, especially from 200:1 to 1:200.

The rate of application may vary within wide limits and depends on the nature of the soil, the method of application (pre- or post-emergence; seed dressing; application to the seed furrow; no tillage application etc.), the crop plant, the weed to be controlled, the prevailing climatic conditions, and other factors governed by the method of application, the time of application and the target crop. The active ingredient mixture according to the invention can generally be applied at a rate of from 1 to 5000 g of active ingredient mixture/ha.

The mixtures of the compound of formula I with the compounds of formulae 2.1 to 2.51 may be used in unmodified form, that is to say as obtained in the synthesis. Preferably, however, they are formulated in customary manner, together with the adjuvants conventionally used in formulation technology, such as solvents, solid carriers or surfactants, for example into emulsifiable concentrates, directly sprayable or dilutable solutions, dilute emulsions, wettable powders, soluble powders, dusts, granules or microcapsules. As with the nature of the compositions, the methods of application, such as spraying, atomising, dusting, wetting, scattering or pouring, are chosen in accordance with the intended objectives and the prevailing circumstances.

The formulations, i.e. the compositions, preparations or mixtures comprising the compounds (active ingredients) of formulae I and 2.1 to 2.51 and, where appropriate, one or more solid or liquid formulation adjuvants, are prepared in a manner known *per se*, e.g. by intimately mixing and/or grinding the active ingredients with the formulation adjuvants, e.g. solvents or solid carriers. In addition, surface-active compounds (surfactants) may also be used in the preparation of the formulations.

Examples of solvents and solid carriers are given, for example, in WO 97/34485, page 6.

Depending on the nature of the compound of formula I to be formulated, suitable surface-active compounds are non-ionic, cationic and/or anionic surfactants and surfactant mixtures having good emulsifying, dispersing and wetting properties.

Examples of suitable anionic, non-ionic and cationic surfactants are listed, for example, in WO 97/34485, pages 7 and 8.

Also suitable in the preparation of the herbicidal compositions according to the invention are the surfactants conventionally used in formulation technology, which are described, *inter alia*, in "McCutcheon's Detergents and Emulsifiers Annual" MC Publishing Corp., Ridgewood New Jersey, 1981, Stache, H., "Tensid-Taschenbuch", Carl Hanser Verlag, Munich/Vienna, 1981 and M. and J. Ash, "Encyclopedia of Surfactants", Vol I-III, Chemical Publishing Co., New York, 1980-81.

The herbicidal formulations usually contain from 0.1 to 99 % by weight, especially from 0.1 to 95 % by weight, of active ingredient mixture comprising a compound of formula I and the compounds of formulae 2.1 to 2.51, from 1 to 99.9 % by weight of a solid or liquid formulation adjuvant, and from 0 to 25 % by weight, especially from 0.1 to 25 % by weight, of a surfactant.

Whereas commercial products are usually formulated as concentrates, the end user will normally employ dilute formulations. The compositions may also comprise further ingredients, such as stabilisers, e.g. vegetable oils or epoxidised vegetable oils (epoxidised coconut oil, rapeseed oil or soybean oil), antifoams, e.g. silicone oil, preservatives, viscosity

regulators, binders, tackifiers, and also fertilisers or other active ingredients. Preferred formulations have especially the following compositions:

(% = percent by weight)

Emulsifiable concentrates:

active ingredient mixture:	1 to 90 %, preferably 5 to 20 %
surfactant:	1 to 30 %, preferably 10 to 20 %
liquid carrier:	5 to 94 %, preferably 70 to 85 %

Dusts:

active ingredient mixture:	0.1 to 10 %, preferably 0.1 to 5 %
solid carrier:	99.9 to 90 %, preferably 99.9 to 99 %

Suspension concentrates:

active ingredient mixture:	5 to 75 %, preferably 10 to 50 %
water:	94 to 24 %, preferably 88 to 30 %
surfactant:	1 to 40 %, preferably 2 to 30 %

Wettable powders:

active ingredient mixture:	0.5 to 90 %, preferably 1 to 80 %
surfactant:	0.5 to 20 %, preferably 1 to 15 %
solid carrier:	5 to 95 %, preferably 15 to 90 %

Granules:

active ingredient mixture:	0.1 to 30 %, preferably 0.1 to 15 %
solid carrier:	99.5 to 70 %, preferably 97 to 85 %

The following Examples illustrate the invention further, but do not limit the invention.

F1. Emulsifiable concentrates

	a)	b)	c)	d)
active ingredient mixture	5 %	10 %	25 %	50 %
calcium dodecylbenzenesulfonate	6 %	8 %	6 %	8 %
castor oil polyglycol ether (36 mol of ethylene oxide)	4 %	-	4 %	4 %

octylphenol polyglycol ether (7-8 mol of ethylene oxide)	-	4 %	-	2 %
cyclohexanone	-	-	10 %	20 %
arom. hydrocarbon mixture C ₉ -C ₁₂	85 %	78 %	55 %	16 %

Emulsions of any desired concentration can be obtained from such concentrates by dilution with water.

F2. Solutions

	a)	b)	c)	d)
active ingredient mixture	5 %	10 %	50 %	90 %
1-methoxy-3-(3-methoxy- propoxy)-propane	-	20 %	20 %	-
polyethylene glycol MW 400	20 %	10 %	-	-
N-methyl-2-pyrrolidone	-	-	30 %	10 %
arom. hydrocarbon mixture C ₉ -C ₁₂	75 %	60 %	-	-

The solutions are suitable for use in the form of microdrops.

F3. Wettable powders

	a)	b)	c)	d)
active ingredient mixture	5 %	25 %	50 %	80 %
sodium lignosulfonate	4 %	-	3 %	-
sodium lauryl sulfate	2 %	3 %	-	4 %
sodium diisobutyl-naphthalene- sulfonate	-	6 %	5 %	6 %
octylphenol polyglycol ether (7-8 mol of ethylene oxide)	-	1 %	2 %	-
highly dispersed silicic acid	1 %	3 %	5 %	10 %
kaolin	88 %	62 %	35 %	-

The active ingredient is mixed thoroughly with the adjuvants and the mixture is thoroughly ground in a suitable mill, affording wettable powders which can be diluted with water to give suspensions of any desired concentration.

F4. Coated granules

	a)	b)	c)
active ingredient mixture	0.1 %	5 %	15 %

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highly dispersed silicic acid	0.9 %	2 %	2 %
inorganic carrier	99.0 %	93 %	83 %

(Æ 0.1 - 1 mm)

e.g. CaCO₃ or SiO₂

The active ingredient is dissolved in methylene chloride and applied to the carrier by spraying, and the solvent is then evaporated off *in vacuo*.

<u>F5. Coated granules</u>	a)	b)	c)
active ingredient mixture	0.1 %	5 %	15 %
polyethylene glycol MW 200	1.0 %	2 %	3 %
highly dispersed silicic acid	0.9 %	1 %	2 %
inorganic carrier	98.0 %	92 %	80 %

(Æ 0.1 - 1 mm)

e.g. CaCO₃ or SiO₂

The finely ground active ingredient is uniformly applied, in a mixer, to the carrier moistened with polyethylene glycol. Non-dusty coated granules are obtained in this manner.

<u>F6. Extruder granules</u>	a)	b)	c)	d)
active ingredient mixture	0.1 %	3 %	5 %	15 %
sodium lignosulfonate	1.5 %	2 %	3 %	4 %
carboxymethylcellulose	1.4 %	2 %	2 %	2 %
kaolin	97.0 %	93 %	90 %	79 %

The active ingredient is mixed and ground with the adjuvants, and the mixture is moistened with water. The mixture is extruded and then dried in a stream of air.

<u>F7. Dusts</u>	a)	b)	c)
active ingredient mixture	0.1 %	1 %	5 %
talcum	39.9 %	49 %	35 %
kaolin	60.0 %	50 %	60 %

Ready-to-use dusts are obtained by mixing the active ingredient with the carriers and grinding the mixture in a suitable mill.

<u>F8. Suspension concentrates</u>	a)	b)	c)	d)
active ingredient mixture	3 %	10 %	25 %	50 %

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ethylene glycol	5 %	5 %	5 %	5 %
nonylphenol polyglycol ether (15 mol of ethylene oxide)	-	1 %	2 %	-
sodium lignosulfonate	3 %	3 %	4 %	5 %
carboxymethylcellulose	1 %	1 %	1 %	1 %
37 % aqueous formaldehyde solution	0.2 %	0.2 %	0.2 %	0.2 %
silicone oil emulsion	0.8 %	0.8 %	0.8 %	0.8 %
water	87 %	79 %	62 %	38 %

The finely ground active ingredient is intimately mixed with the adjuvants, giving a suspension concentrate from which suspensions of any desired concentration can be obtained by dilution with water.

It is often more practical for the compound of formula I and the mixing partner or partners of formulae 2.1 to 2.51 to be formulated separately and to be brought together in the desired mixing ratio in the applicator in the form of a "tank mixture" in water shortly before application.

Biological Examples:

A synergistic effect exists whenever the action of the active ingredient combination of compounds of formula I and 2.1 to 2.51 is greater than the sum of the actions of the active ingredients applied separately.

The herbicidal action to be expected We for a given combination of two herbicides can be calculated as follows (see COLBY, S.R., "Calculating synergistic and antagonistic response of herbicide combinations", Weeds 15, pages 20-22, 1967):

$$We = X + [Y \cdot (100 - X) / 100]$$

wherein:

X = percentage herbicidal action on treatment with the compound of formula I at a rate of application of p kg per hectare, compared with the untreated control (= 0 %).

Y = percentage herbicidal action on treatment with a compound of formula 2.1 to 2.51 at a rate of application of q kg per hectare, compared with the untreated control.

W_e = expected herbicidal action (percentage herbicidal action compared with the untreated control) following treatment with the compounds of formulae I and 2.1 to 2.51 at a rate of application of $p + q$ kg of active ingredient per hectare.

When the action actually observed is greater than the value to be expected W_e , there is a synergistic effect.

The synergistic effect of the combinations of a compound of formula I with the compounds of formulae 2.1 to 2.51 is demonstrated in the following Examples.

Experiment description - pre-emergence test:

Monocotyledonous and dicotyledonous test plants are sown in standard soil in plastics pots. Directly after sowing, the test substances are applied in aqueous suspension by spraying (500 litres of water/ha). The rates of application depend on the optimum doses ascertained under field conditions and greenhouse conditions. The test plants are then grown on in the greenhouse under optimum conditions. The tests are evaluated after 36 days (% action, 100 % = plant has died, 0 % = no phytotoxic action). Examples of the synergistic action of the compositions according to the invention are given in the following Tables B1 to B6:

Mixture A contains as active ingredients 915 g/litre of the compound of formula 2.2a and 45 g/litre of the compound of formula 3.1.

Table B1:

Test plant:	Compd. 1.001 [25 g/ha]	Mixture A [900 g/ha]	Compd. 1.001 [25 g/ha] + mixture A [900 g/ha]	W_e according to Colby
Sorghum	30	20	90	44
Chenopodium	0	0	100	0
Sida	0	70	100	70

Table B2:

Test plant:	Compd. 1.001 [12.5 g/ha]	Mixture A [900 g/ha]	Compd. 1.001 [12.5 g/ha] + mixture A [900 g/ha]	We accord- ing to Colby
Sorghum	0	20	80	20
Chenopodium	0	0	95	0
Sida	0	70	95	70

Table B3:

Test plant:	Compd. 1.001 [6.25 g/ha]	Mixture A [900 g/ha]	Compd. 1.001 [6.25 g/ha] + mixture A [900 g/ha]	We accord- ing to Colby
Sorghum	0	20	70	20
Chenopodium	0	0	95	0
Sida	0	70	95	70

Table B4:

Test plant:	Compd. 1.001 [25 g/ha]	Mixture A [300 g/ha]	Compd. 1.001 [25 g/ha] + mixture A [300 g/ha]	We accord- ing to Colby
Chenopodium	0	0	90	0
Ipomoea	30	0	100	30
Sida	0	0	40	0

Table B5:

Test plant:	Compd. 1.001 [12.5 g/ha]	Mixture A [300 g/ha]	Compd. 1.001 [12.5 g/ha] + mixture A [300 g/ha]	We accord- ing to Colby
Chenopodium	0	0	80	0
Ipomoea	0	0	60	0
Sida	0	0	40	0

Table B6:

Test plant:	Compd. 1.001 [6.25 g/ha]	Mixture A [300 g/ha]	Compd. 1.001 [6.25 g/ha] + mixture A [300 g/ha]	We accord- ing to Colby
Chenopodium	0	0	80	0
Ipomoea	0	0	60	0
Sida	0	0	40	0

Experiment description - post-emergence test:

The test plants are grown to the 2- to 3-leaf stage in plastics pots under greenhouse conditions. A standard soil is used as cultivation substrate. At the 2- to 3-leaf stage, the herbicide is applied to the test plants on its own and as a mixture. The application is carried out using an aqueous suspension of the test substances in 500 litres of water/ha. The rates of application depend on the optimum doses ascertained under field conditions and greenhouse conditions. The tests are evaluated after 33 days (% action, 100 % = plant has died, 0 % = no phytotoxic action). Examples of the synergistic action of the compositions according to the invention are given in the following Tables B7 to B10:

Mixture A contains as active ingredients 915 g/litre of the compound of formula 2.2a and 45 g/litre of the compound of formula 3.1.

Table B7: Post-emergence test:

Test plant:	Compd. 1.001 [12.5 g/ha]	Mixture A [900 g/ha]	Compd. 1.001 [12.5 g/ha] + mixture A [900 g/ha]	We accord- ing to Colby
Ipomoea	0	0	80	0
Polygonum	0	20	100	20
Xanthium	80	0	100	80

Table B8: Post-emergence test:

Test plant:	Compd. 1.001 [12.5 g/ha]	Mixture A [300 g/ha]	Compd. 1.001 [12.5 g/ha] + mixture A [300 g/ha]	We accord- ing to Colby
Ipomoea	0	0	80	0
Polygonum	0	0	70	0
Xanthium	80	0	98	80

Table B9: Post-emergence test:

Test plant:	Compd. 1.001 [6.25 g/ha]	Mixture A [900 g/ha]	Compd. 1.001 [6.25 g/ha] + mixture A [900 g/ha]	We accord- ing to Colby
Ipomoea	0	0	70	0
Polygonum	0	20	70	20
Xanthium	70	0	80	70

Table B10: Post-emergence test:

Test plant:	Compd. 1.001 [6.25 g/ha]	Mixture A [300 g/ha]	Compd. 1.001 [6.25 g/ha] + mixture A [300 g/ha]	We accord- ing to Colby
Ipomoea	0	0	80	0
Polygonum	0	0	70	0
Xanthium	70	0	70	70

In the following Tables, evaluation is carried out after 14 days:

Table B11: Pre-emergence action:

Test plant:	Compd. E8 [50 g/ha]	Compd. 2.18 [500 g/ha]	Compd. E8 [50 g/ha] + compd. 2.18 [500 g/ha]	We accord- ing to Colby
Polygonum	50	80	95	90

Table B12: Pre-emergence action:

Test plant:	Compd. E8 [100 g/ha]	Compd. 2.14 [250 g/ha]	Compd. E8 [100 g/ha] + compd. 2.14 [250 g/ha]	We acord- ing to Colby
Polygonum	50	50	90	75

Table B13: Pre-emergence action:

Test plant:	Compd. E8 [100 g/ha]	Compd. 2.14 [125 g/ha]	Compd. E8 [100 g/ha] + compd. 2.14 [125 g/ha]	We accord- ing to Colby
Polygonum	50	30	90	65

Table B14: Pre-emergence action: Compound no. 2.13a corresponds to formula 2.13 wherein R_{74} is $-\text{CH}_2\text{CH}_2\text{CF}_3$, Y_1 , Y_2 , Y_3 and Y_4 are each methine, Y_5 is nitrogen and Y_6 is methyl.

Test plant:	Compd. E8 [100 g/ha]	Compd. 2.13a [60 g/ha]	Compd. E8 [100 g/ha] + compd. 2.13a [60 g/ha]	We accord- ing to Colby
Polygonum	50	80	95	90

Table B15: Pre-emergence action:

Test plant:	Compd. E8 [50 g/ha]	Compd. 2.30 [60 g/ha]	Compd. E8 [50 g/ha] + compd. 2.30 [60 g/ha]	We accord- ing to Colby
Polygonum	50	30	90	65

Table B16: Pre-emergence action:

Test plant:	Compd. E8 [50 g/ha]	Compd. 2.21 [30 g/ha]	Compd. E8 [50 g/ha] + compd. 2.21 [30 g/ha]	We accord- ing to Colby
Polygonum	50	50	100	75

Table B17: Pre-emergence action: Compound no. 2.4.a corresponds to formula 2.4 wherein R_{57} is chlorine, R_{58} is ethyl and R_{59} is tert-butyl.

Test plant:	Compd. E8 [50 g/ha]	Compd. 2.4.a [125 g/ha]	Compd. E8 [50 g/ha] + compd. 2.4.a [125 g/ha]	We accord- ing to Colby
Polygonum	50	30	85	65

Table B18: Pre-emergence action:

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.2.b [300 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.2.b [300 g/ha]	We accord- ing to Colby
Chenopodium	80	0	95	80
Solanum	80	40	98	88
Cyperus	0	0	50	0

Table B19: Pre-emergence action:

Compound no. 2.3.a corresponds to formula 2.3 wherein R_{56} is $\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$.

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.3.a [100 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.3.a [100 g/ha]	We accord- ing to Colby
Chenopodium	80	20	90	84
Solanum	75	60	90	90
Cyperus	0	20	60	20

Table B20: Pre-emergence action:

Compound no. 2.2.c corresponds to formula 2.2 wherein R₅₃ and R₅₄ are ethyl and R₅₅ is CH₂OMe.

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.2.c [100 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.2.c [100 g/ha]	We according to Colby
Chenopodium	80	20	90	84
Solanum	75	50	95	88
Cyperus	0	0	30	0

Table B21: Pre-emergence action:

Compound no. 2.2.d corresponds to formula 2.2 wherein R₅₃ is ethyl, R₅₄ is methyl and R₅₅ is CH₂O-CH₂CH₃.

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.2.d [100 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.2.d [100 g/ha]	We according to Colby
Solanum	75	60	95	90

Table B22: Pre-emergence action:

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.30 [100 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.30 [100 g/ha]	We according to Colby
Cyperus	10	0	60	10

In the following Tables, evaluation is carried out after 31 days:

Table B23: Pre-emergence action: Compound no. 2.4.a corresponds to the compound of formula 2.4 wherein R₅₇ is chlorine, R₅₈ is ethyl and R₅₉ is isopropyl.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.4.a [250 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.4.a [250 g/ha]	We according to Colby
Polygonum	0	20	80	20

Table B24: Pre-emergence action: Compound no. 2.4.b corresponds to the compound of formula 2.4 wherein R₅₇ is chlorine, R₅₈ is ethyl and R₅₉ is ethyl.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.4.b [125 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.4.b [125 g/ha]	We according to Colby
Polygonum	0	0	40	0

Table B25: Pre-emergence action: Compound no. 2.4.c corresponds to the compound of formula 2.4 wherein R₅₇ is chlorine, R₅₈ is ethyl and R₅₉ is tert-butyl.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.4.c [250 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.4.c [250 g/ha]	We according to Colby
Ipomoea	70	0	90	70
Xanthium	80	0	100	80

Table B26: Pre-emergence action: Compound no. 2.4.d corresponds to the compound of formula 2.4 wherein R₅₇ is methylthio, R₅₈ is ethyl and R₅₉ is tert-butyl.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.4.d [250 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.4.d [250 g/ha]	We according to Colby
Ipomoea	70	0	80	70
Xanthium	80	10	95	82

Table B27: Pre-emergence action:

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.14 [125 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.14 [125 g/ha]	We according to Colby
Ipomoea	70	0	85	70
Xanthium	80	20	100	84

Table B28: Pre-emergence action: Compound no. 2.6.a corresponds to the compound of formula 2.6 wherein R₆₂ is hydrogen, R₆₃ is methyl, R₆₄ is fluorine, R₆₅ is hydrogen, Y is nitrogen, Z is methine and R₆₆ is fluorine.

Test plant:	Compd. 1.001 [50 g/ha]	Compd. 2.6.a [30 g/ha]	Compd. 1.001 [50 g/ha] + compd. 2.6.a [30 g/ha]	We according to Colby
Polygonum	0	30	90	30

In the following Tables, evaluation is carried out after 21 days:

Table B29: Post-emergence action: Compound no. 2.7.a corresponds to the compound of formula 2.7 wherein R₆₇ is -C(O)-S-n-octyl.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.7.a [250 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.7.a [250 g/ha]	We according to Colby
Ipomoea	30	10	80	30
Polygonum	75	0	95	75
Xanthium	90	10	100	91

Table B30: Post-emergence action:

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.19 [250 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.19 [250 g/ha]	We according to Colby
Ipomoea	30	60	95	72

Table B31: Post-emergence action:

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.16 [360 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.16 [360 g/ha]	We according to Colby
Ipomoea	30	20	70	46
Polygonum	75	10	90	84

Table B32: Post-emergence action:

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.33 [360 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.33 [360 g/ha]	We according to Colby
Polygonum	30	0	90	30

Table B33: Post-emergence action: Compound no. 2.12.a corresponds to the compound of formula 2.12 wherein R₇₃ is NH₂.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.12.a [400 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.33 [400 g/ha]	We according to Colby
Ipomoea	30	20	90	44

Table B34: Post-emergence action:

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.25 [2 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.25 [2 g/ha]	We according to Colby
Ipomoea	30	0	50	30
Polygonum	30	0	40	30

Table B35: Post-emergence action: Compound no. 2.1.a corresponds to the compound of formula 2.1 wherein R₅₂ is hydrogen and R₅₁ is ethyl.

Test plant:	Compd. 1.001 [12.5 g/ha]	Compd. 2.1.a [30 g/ha]	Compd. 1.001 [12.5 g/ha] + compd. 2.1.a [30 g/ha]	We according to Colby
Polygonum	30	30	70	51

Table B36: Post-emergence action: Compound no. 2.1.b corresponds to the compound of formula 2.1 wherein R₅₁ is CH₂OMe and R₅₂ is hydrogen.

Test plant:	Compd. 1.001 [25 g/ha]	Compd. 2.1.b [30 g/ha]	Compd. 1.001 [25 g/ha] + compd. 2.1.b [30 g/ha]	We according to Colby
Polygonum	75	30	90	83

In the following Tables, evaluation is carried out after 23 days:

Table B37: Pre-emergence action: Compound no. 2.13.b corresponds to formula 2.13 wherein R₇₄ is -COOMe, Y₁, Y₂, Y₃ and Y₄ are each methine, Y₅ is methine and Y₆ and Y₇ are difluoromethoxy.

Test plant:	Compd. 1.001 [6 g/ha]	Compd. 2.13.b [15 g/ha]	Compd. 1.001 [6 g/ha] + compd. 2.13.b [15 g/ha]	We according to Colby
Chenopodium	50	70	95	85

Table B38: Pre-emergence action:

Test plant:	Compd. 1.001 [6 g/ha]	Compd. 2.13.c [60 g/ha]	Compd. 1.001 [6 g/ha] + compd. 2.13.c [60 g/ha]	We according to Colby
Chenopodium	50	10	85	55

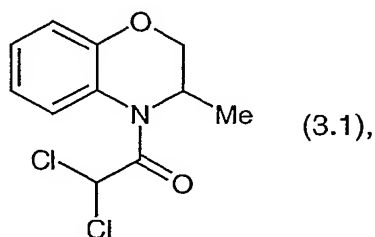
Table B39: Pre-emergence action: Compound no. 2.13.d corresponds to the compound of formula 2.13 wherein Y₁, Y₂, Y₃ and Y₄ are methine, R₇₄ is trifluoromethyl, Y₅ is nitrogen, Y₆ is trifluoromethyl and Y₇ is methoxy.

Test plant:	Compd. 1.001 [6 g/ha]	Compd. 2.13d [7.5 g/ha]	Compd. 1.001 [6 g/ha] + compd. 2.13.d [7.5 g/ha]	We according to Colby
Amaranthus	10	80	95	82

It has surprisingly been shown that special safeners are suitable for mixing with the synergistic composition according to the invention. The present invention accordingly relates also to a herbicidally selective composition for controlling grasses and weeds in crops of useful plants, especially in maize crops, that comprises a compound of formula I, one or more compounds selected from the compounds of formulae 2.1 to 2.51, and a safener (counter agent, antidote), and that protects the useful plants, but not the weeds, against the phytotoxic action of the herbicide, as well as to the use of such a composition in the control of weeds in crops of useful plants.

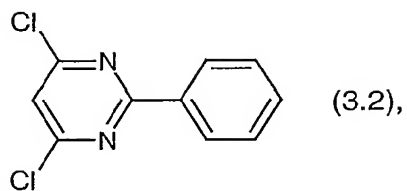
There is also proposed in accordance with the invention a herbicidally selective composition that, in addition to comprising customary inert formulation adjuvants, such as carriers, solvents and wetting agents, comprises as active ingredient a mixture of

- a herbicidally-synergistically effective amount of a compound of formula I and one or more compounds selected from the compounds of formulae 2.1 to 2.51 and
- a herbicidally-antagonistically effective amount of a compound selected from the compound of formula 3.1

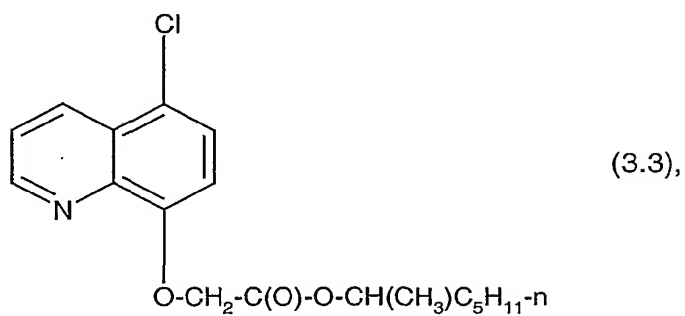


and the compound of formula 3.2

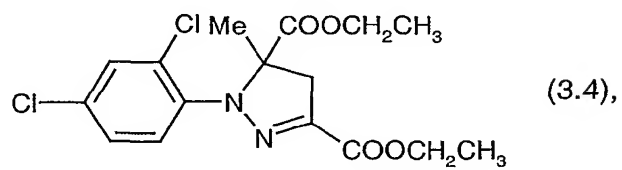
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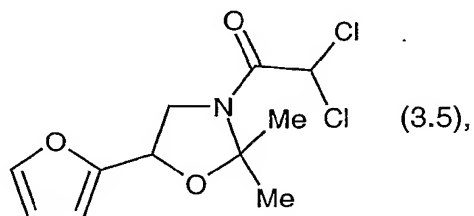
and the compound of formula 3.3



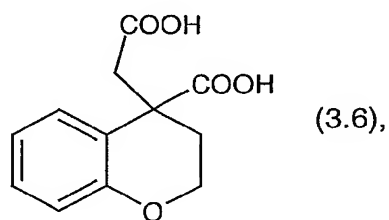
and the compound of formula 3.4



and the compound of formula 3.5

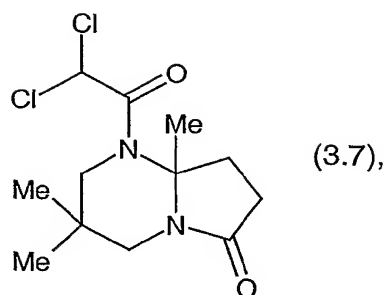


and the compound of formula 3.6

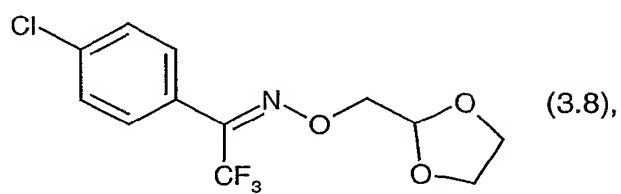


and the compound of formula 3.7

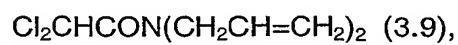
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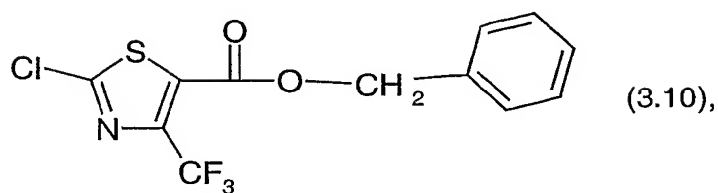
and the compound of formula 3.8



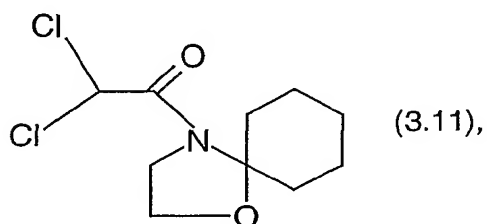
and of formula 3.9



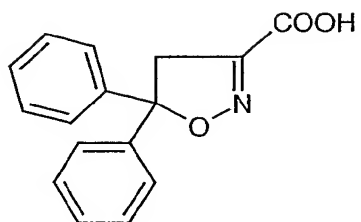
and of formula 3.10



and of formula 3.11

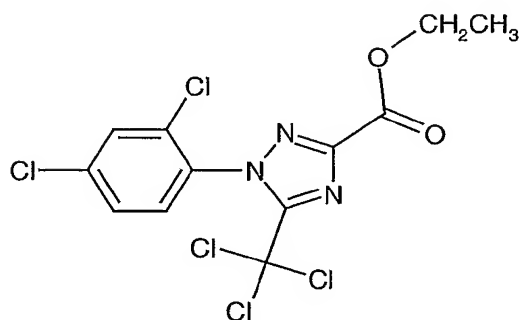


and of formula 3.12



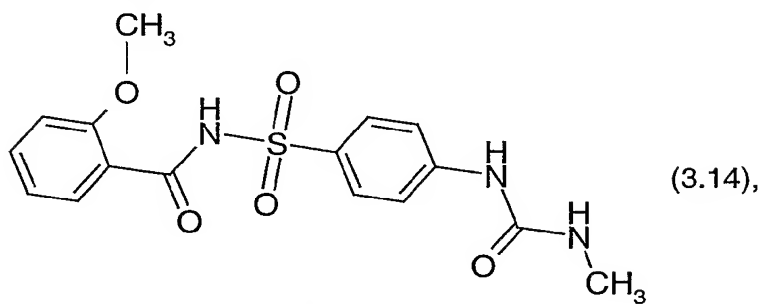
(3.12) and its ethyl ester,

and of formula 3.13



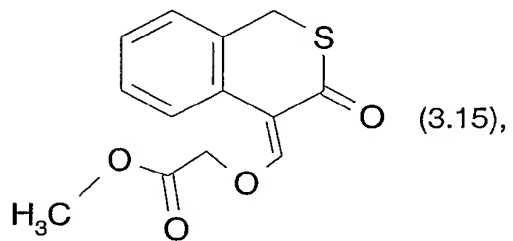
(3.13),

and of formula 3.14



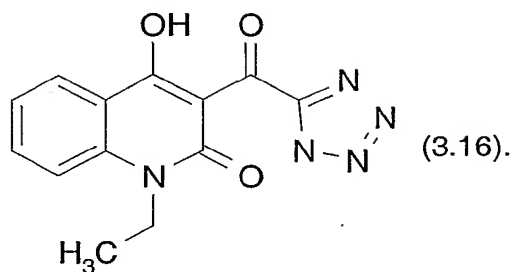
(3.14),

and of formula 3.15



(3.15),

and of formula 3.16

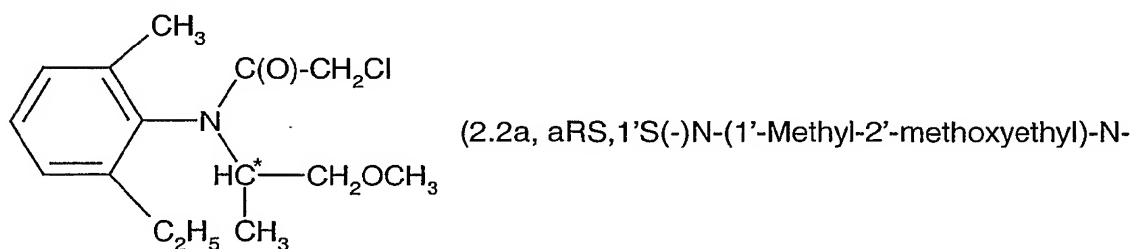


The invention relates also to a herbicidally selective herbicidal composition that, in addition to comprising customary inert formulation adjuvants, such as carriers, solvents and wetting agents, comprises as active ingredient a mixture of

- a) a herbicidally effective amount of a compound of formula I and
- b) a herbicidally-antagonistically effective amount of a compound selected from the compounds of formulae 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13, 3.14, 3.15 and 3.16.

Preferred compositions according to the invention comprise as safener a compound selected from the compounds of formulae 3.1, 3.3 and 3.8. Those safeners are especially suitable for compositions according to the invention that comprise the above-mentioned preferred compounds of formula I and optionally of formulae 2.1 to 2.51.

Combinations of compounds of formula I with the compound of formula 3.1 have been shown to be especially effective compositions, with special preference being given to compound no. 1.001 as the compound of formula I. That composition is preferably used together with the compound of formula 2.2a



chloroacetyl-2-ethyl-6-methylaniline).

The invention relates also to a method for the selective control of weeds in crops of useful plants, which comprises treating the useful plants, seeds or cuttings thereof, or the area of cultivation thereof, with a herbicidally effective amount of the herbicide of formula I, as

appropriate one or more herbicides selected from the compounds of formulae 2.1 to 2.51, and a herbicidally-antagonistically effective amount of a safener of formulae 3.1 to 3.16.

The compounds of formulae 3.1 to 3.16 are known and are described, for example, in the Pesticide Manual, eleventh ed., British Crop Protection Council, 1997 under the entry numbers 61 (formula 3.1, benoxacor), 304 (formula 3.2, fenclorim), 154 (formula 3.3, cloquintocet), 462 (formula 3.4, mefenpyr-diethyl), 377 (formula 3.5, furilazol), 363 (formula 3.8, fluxofenim), 213 (formula 3.9, dichlormid) and 350 (formula 3.10, flurazole). The compound of formula 3.11 is known by the name MON 4660 (Monsanto) and is described, for example, in EP-A-0 436 483.

The compound of formula 3.6 (AC 304 415) is described, for example, in EP-A-0 613 618, and the compound of formula 3.7 in DE-A-2 948 535. The compounds of formula 3.12 are described in DE-A-4 331 448, and the compound of formula 3.13 in DE-A-3 525 205. The compound of formula 3.14 is known, for example, from US-A-5 215 570 and the compound of formula 3.15 from EP-A-0 929 543. The compound of formula 3.16 is described in WO 99/00020. In addition to the compound of formula 3.16, the other 3-(5-tetrazolyl-carbonyl)-2-quinolones described in WO 99/00020, especially the compounds specifically disclosed in Tables 1 and 2 on pages 21 to 29, are suitable for protecting the crop plants against the phytotoxic action of the compounds of formula I.

As crop plants that can be protected by the safeners of formulae 3.1 to 3.16 against the damaging effect of the above-mentioned herbicides there come into consideration especially cereals, cotton, soybeans, sugar beet, sugar cane, plantation crops, rape, maize and rice, more especially maize. "Crops" are to be understood to mean also those crops which have been made tolerant to herbicides or classes of herbicides as a result of conventional methods of breeding or genetic engineering.

The weeds to be controlled may be both monocotyledonous and dicotyledonous weeds, e.g. Stellaria, Agrostis, Digitaria, Avena, Apera, Brachiaria, Phalaris, Setaria, Sinapis, Lolium, Solanum, Echinochloa, Scirpus, Monochoria, Sagittaria, Panicum, Bromus, Alopecurus, Sorghum halepense, Sorghum bicolor, Rottboellia, Cyperus, Abutilon, Sida, Xanthium, Amaranthus, Chenopodium, Ipomoea, Chrysanthemum, Galium, Viola and Veronica.

Areas of cultivation include the areas of ground on which the crop plants are already growing or which have already been sown with the seeds of those crop plants, as well as ground intended for cultivation with such crop plants.

Depending on the intended use, a safener of formula 3.1 to 3.16 can be used in the pretreatment of the seed of the crop plant (dressing of the seeds or cuttings) or can be introduced into the soil before or after sowing. It can, however, also be applied, either alone or together with the herbicide, after emergence of the plants. The treatment of the plants or seeds with the safener can therefore in principle be carried out independently of the time at which the herbicide is applied. The plants can, however, also be treated by simultaneous application of herbicide and safener (e.g. in the form of a tank mixture). The ratio of the rate of application of safener to the rate of application of herbicide depends largely on the method of application. In the case of field treatment, which is carried out either using a tank mixture comprising a combination of safener and herbicide or by separate application of safener and herbicide, the ratio of herbicides to safener is generally from 100:1 to 1:10, preferably from 20:1 to 1:1. In the case of field treatment it is usual to apply from 0.001 to 1.0 kg of safener/ha, preferably from 0.001 to 0.25 kg of safener/ha.

The rate of application of herbicides is generally from 0.001 to 2 kg/ha, but preferably from 0.005 to 0.5 kg/ha.

The compositions according to the invention are suitable for all methods of application conventionally used in agriculture, e.g. pre-emergence application, post-emergence application and seed dressing.

In the case of seed dressing, generally from 0.001 to 10 g of safener/kg of seed, preferably from 0.05 to 2 g of safener/kg of seed, are applied. When the safener is applied in liquid form shortly before sowing, with soaking of the seeds, then advantageously the safener solutions used contain the active ingredient in a concentration of from 1 to 10 000 ppm, preferably from 100 to 1000 ppm.

For the purpose of application, the safeners of formulae 3.1 to 3.16 or combinations of those safeners with the herbicide of formula I and, as appropriate, one or more herbicides selected from formulae 2.1 to 2.51 are advantageously formulated together with adjuvants customary

in formulation technology, e.g. into emulsifiable concentrates, coatable pastes, directly sprayable or dilutable solutions, dilute emulsions, wettable powders, soluble powders, dusts, granules or microcapsules.

Such formulations are described, for example, in WO 97/34485, pages 9 to 13. The formulations are prepared in known manner, e.g. by intimately mixing and/or grinding the active ingredients with liquid or solid formulation adjuvants, e.g. solvents or solid carriers. In addition, surface-active compounds (surfactants) can also be used in the preparation of the formulations. Solvents and solid carriers suitable for that purpose are mentioned, e.g., in WO 97/34485, page 6.

Depending on the nature of the compounds of formulae I, 2.1 to 2.51 and 3.1 to 3.16 to be formulated, there come into consideration as surface-active compounds non-ionic, cationic and/or anionic surfactants and surfactant mixtures having good emulsifying, dispersing and wetting properties. Examples of suitable anionic, non-ionic and cationic surfactants are listed, for example, on pages 7 and 8 of WO 97/34485. Also suitable for the preparation of the herbicidal compositions according to the invention are the surfactants conventionally employed in formulation technology, which are described, *inter alia*, in "McCutcheon's Detergents and Emulsifiers Annual" MC Publishing Corp., Ridgewood New Jersey, 1981, Stache, H., "Tensid-Taschenbuch", Carl Hanser Verlag, Munich/Vienna, 1981 and M. and J. Ash, "Encyclopedia of Surfactants", Vol. I-III, Chemical Publishing Co., New York, 1980-81.

The herbicidal formulations usually contain from 0.1 to 99 % by weight, especially from 0.1 to 95 % by weight, of active ingredient mixture comprising a compound of formula I, a compound selected from the compounds of formulae 2.1 to 2.51 and the compounds of formulae 3.1 to 3.16, from 1 to 99.9 % by weight of a solid or liquid formulation adjuvant and from 0 to 25 % by weight, especially from 0.1 to 25 % by weight, of a surfactant. Whereas commercial products are usually formulated as concentrates, the end user will normally employ dilute formulations.

The compositions may also comprise further ingredients, such as stabilisers, e.g. vegetable oils or epoxidised vegetable oils (epoxidised coconut oil, rapeseed oil or soybean oil), anti-foams, e.g. silicone oil, preservatives, viscosity regulators, binders, tackifiers, and also

fertilisers or other active ingredients. For the use of safeners of formulae 3.1 to 3.16, or of compositions comprising them, in the protection of crop plants against the damaging effects of herbicides of formulae I and 2.1 to 2.51, various methods and techniques come into consideration, such as, for example, the following:

i) Seed dressing

- a) Dressing of the seeds with a wettable powder formulation of a compound of formulae 3.1 to 3.16 by shaking in a vessel until uniformly distributed over the seed surface (dry dressing). In that procedure approximately from 1 to 500 g of compound of formulae 3.1 to 3.16 (4 g to 2 kg of wettable powder) are used per 100 kg of seed.
- b) Dressing of the seeds with an emulsifiable concentrate of a compound of formulae 3.1 to 3.16 according to method a) (wet dressing).
- c) Dressing by immersing the seeds for from 1 to 72 hours in a liquor comprising from 100 to 1000 ppm of a compound of formulae 3.1 to 3.16 and optionally subsequently drying the seeds (immersion dressing).

Dressing the seed or treating the germinated seedling are naturally the preferred methods of application, because treatment with the active ingredients is directed entirely at the target crop. Generally from 1 to 1000 g of antidote, preferably from 5 to 250 g of antidote, are used per 100 kg of seed, but depending on the methodology, which also enables the addition of other active ingredients or micronutrients, the concentration limits indicated can be varied up or down (repeat dressing).

ii) Application as a tank mixture

A liquid formulation of a mixture of antidote and herbicide is used (ratio by weight of the one to the other from 10:1 to 1:100), the rate of application of herbicide being from 0.005 to 5.0 kg per hectare. Such tank mixtures are applied before or after sowing.

iii) Application to the seed furrow

The compounds of formulae 3.1 to 3.16 are introduced into the open, sown seed furrow in the form of an emulsifiable concentrate, wettable powder or granules. Once the seed furrow has been covered over, the herbicide is applied in the usual manner in the pre-emergence process.

iv) Controlled release of active ingredient

The compounds of formulae 3.1 to 3.16 are applied in solution to mineral granule carriers or polymerised granules (urea/formaldehyde) and dried. If desired, it is also possible to apply a coating that allows the active ingredient to be released in metered amounts over a specific period of time (coated granules).

Preferred formulations have especially the following compositions:

(% = percent by weight)

Emulsifiable concentrates:

active ingredient mixture:	1 to 90 %, preferably 5 to 20 %
surfactant:	1 to 30 %, preferably 10 to 20 %
liquid carrier:	5 to 94 %, preferably 70 to 85 %

Dusts:

active ingredient mixture:	0.1 to 10 %, preferably 0.1 to 5 %
solid carrier:	99.9 to 90 %, preferably 99.9 to 99 %

Suspension concentrates:

active ingredient mixture:	5 to 75 %, preferably 10 to 50 %
water:	94 to 24 %, preferably 88 to 30 %
surfactant:	1 to 40 %, preferably 2 to 30 %

Wettable powders:

active ingredient mixture:	0.5 to 90 %, preferably 1 to 80 %
surfactant:	0.5 to 20 %, preferably 1 to 15 %
solid carrier:	5 to 95 %, preferably 15 to 90 %

Granules:

active ingredient mixture:	0.1 to 30 %, preferably 0.1 to 15 %
solid carrier:	99.5 to 70 %, preferably 97 to 85 %

The following Examples illustrate the invention further, but do not limit the invention.

Formulation Examples for mixtures of herbicides of formula I, optionally herbicides of formulae 2.1 to 2.51, and safeners of formulae 3.1 to 3.16 (% = percent by weight)

<u>F1. Emulsifiable concentrates</u>	a)	b)	c)	d)
active ingredient mixture	5 %	10 %	25 %	50 %
calcium dodecylbenzenesulfonate	6 %	8 %	6 %	8 %
castor oil polyglycol ether (36 mol of ethylene oxide)	4 %	-	4 %	4 %
octylphenol polyglycol ether (7-8 mol of ethylene oxide)	-	4 %	-	2 %
cyclohexanone	-	-	10 %	20 %
aromatic hydrocarbon mixture	85 %	78 %	55 %	16 %

C₉-C₁₂

Emulsions of any desired concentration can be obtained from such concentrates by dilution with water.

<u>F2. Solutions</u>	a)	b)	c)	d)
active ingredient mixture	5 %	10 %	50 %	90 %
1-methoxy-3-(3-methoxy-propoxy)-propane	-	20 %	20 %	-
polyethylene glycol MW 400	20 %	10 %	-	-
N-methyl-2-pyrrolidone	-	-	30 %	10 %
aromatic hydrocarbon mixture	75 %	60 %	-	-

C₉-C₁₂

The solutions are suitable for use in the form of microdrops.

<u>F3. Wettable powders</u>	a)	b)	c)	d)
active ingredient mixture	5 %	25 %	50 %	80 %
sodium lignosulfonate	4 %	-	3 %	-
sodium lauryl sulfate	2 %	3 %	-	4 %
sodium diisobutyl-naphthalene-sulfonate	-	6 %	5 %	6 %
octylphenol polyglycol ether (7-8 mol of ethylene oxide)	-	1 %	2 %	-
highly dispersed silicic acid	1 %	3 %	5 %	10 %

kaolin	88 %	62 %	35 %	-
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The active ingredient is mixed thoroughly with the adjuvants and the mixture is thoroughly ground in a suitable mill, affording wettable powders which can be diluted with water to give suspensions of any desired concentration.

<u>F4. Coated granules</u>	a)	b)	c)
active ingredient mixture	0.1 %	5 %	15 %
highly dispersed silicic acid	0.9 %	2 %	2 %
inorganic carrier	99.0 %	93 %	83 %

(\bar{A} 0.1 - 1 mm)

e.g. CaCO_3 or SiO_2

The active ingredient is dissolved in methylene chloride and applied to the carrier by spraying, and the solvent is then evaporated off *in vacuo*.

<u>F5. Coated granules</u>	a)	b)	c)
active ingredient mixture	0.1 %	5 %	15 %
polyethylene glycol MW 200	1.0 %	2 %	3 %
highly dispersed silicic acid	0.9 %	1 %	2 %
inorganic carrier	98.0 %	92 %	80 %

(\bar{A} 0.1 - 1 mm)

e.g. CaCO_3 or SiO_2

The finely ground active ingredient is uniformly applied, in a mixer, to the carrier moistened with polyethylene glycol. Non-dusty coated granules are obtained in this manner.

<u>F6. Extruder granules</u>	a)	b)	c)	d)
active ingredient mixture	0.1 %	3 %	5 %	15 %
sodium lignosulfonate	1.5 %	2 %	3 %	4 %
carboxymethylcellulose	1.4 %	2 %	2 %	2 %
kaolin	97.0 %	93 %	90 %	79 %

The active ingredient is mixed and ground with the adjuvants, and the mixture is moistened with water. The mixture is extruded and then dried in a stream of air.

<u>F7. Dusts</u>	a)	b)	c)
active ingredient mixture	0.1 %	1 %	5 %
talcum	39.9 %	49 %	35 %
kaolin	60.0 %	50 %	60 %

Ready-to-use dusts are obtained by mixing the active ingredient with the carriers and grinding the mixture in a suitable mill.

<u>F8. Suspension concentrates</u>	a)	b)	c)	d)
active ingredient mixture	3 %	10 %	25 %	50 %
ethylene glycol	5 %	5 %	5 %	5 %
nonylphenol polyglycol ether (15 mol of ethylene oxide)	-	1 %	2 %	-
sodium lignosulfonate	3 %	3 %	4 %	5 %
carboxymethylcellulose	1 %	1 %	1 %	1 %
37 % aqueous formaldehyde solution	0.2 %	0.2 %	0.2 %	0.2 %
silicone oil emulsion	0.8 %	0.8 %	0.8 %	0.8 %
water	87 %	79 %	62 %	38 %

The finely ground active ingredient is intimately mixed with the adjuvants, giving a suspension concentrate from which suspensions of any desired concentration can be obtained by dilution with water.

It is often more practical for the compounds of formulae I, 2.1 to 2.51 and 3.1 to 3.16 to be formulated separately and then to be brought together in the desired mixing ratio in the applicator in the form of a "tank mixture" in water shortly before application.

The ability of the safeners of formulae 3.1 to 3.16 to protect crop plants against the phytotoxic action of herbicides of formula I is illustrated in the following Examples.

Biological Example: safening action

The test plants are grown in plastics pots under greenhouse conditions to the 4-leaf stage. At that stage, the herbicides alone, and the mixtures of the herbicides with the test compounds that are to be tested as safeners, are applied to the test plants. The application is in the form of an aqueous suspension of the test compounds prepared from a 25 %

wettable powder (Example F3, b)) with 500 litres of water/ha. 4 weeks after application, the phytotoxic action of the herbicides on the crop plants, e.g. maize and cereals, is evaluated using a percentage scale. 100 % denotes that the test plant has died, 0 % denotes no phytotoxic action.

The results obtained in this test demonstrate that damage to the crop plant caused by the herbicide of formula I in combination with one or more herbicides selected from formulae 2.1 to 2.51 can be significantly reduced by the compounds of formulae 3.1 to 3.16. Examples of the safening action are given in the following Table B40:

Table B40:

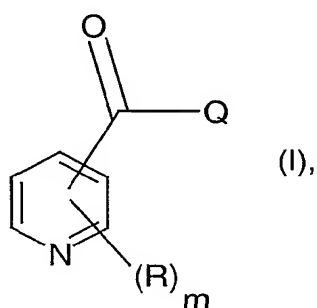
Test plant	Compd. 1.001 [50 g/ha]	Compd. 1.001 [50 g/ha] + compd. 3.3 [50 g/ha]	Compd. 1.001 [50 g/ha] + compd. 3.1 [50 g/ha]	Compd. 1.001 [50 g/ha] + compd. 3.8 [50 g/ha]
Maize	50	5	5	0
Abutilon	100	100	100	100
Setaria	100	100	100	100

The same results are obtained when the mixtures are formulated in accordance with Examples F1, F2 and F4 to F8.

What is claimed is:

1. A herbicidally selective composition that, in addition to comprising customary inert formulation adjuvants, comprises as active ingredient a mixture

a) a herbicidally effective amount of a compound of formula I



wherein each R is independently hydrogen, C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₁-C₆alkoxycarbonyl, C₁-C₆alkylcarbonyl, C₁-C₆alkylamino, di(C₁-C₆alkyl)amino, C₁-C₆alkylaminosulfonyl, di(C₁-C₆alkyl)aminosulfonyl, -N(R₁)-S-R₂, -N(R₃)-SO-R₄, -N(R₅)-SO₂-R₆, nitro, cyano, halogen, hydroxy, amino, benzylthio, benzylsulfinyl, benzylsulfonyl, phenyl, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl; wherein the phenyl group may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₄₅, NR₄₆R₄₇, halogen, cyano, nitro, phenyl or by benzylthio, wherein the latter phenyl and benzylthio groups may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro; or each R is independently a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur; wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring *via* a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by

C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxy-alkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen; or

each R is independently C₁-C₄alkoxy-C₁-C₄alkyl or C₁-C₄alkoxy-C₁-C₄alkoxy-C₁-C₄alkyl;
m is 1, 2, 3 or 4;

R₁, R₃ and R₅ are each independently of the others hydrogen or C₁-C₆alkyl;

R₂ is NR₁₀R₁₁, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₄ is NR₁₂R₁₃, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₆ is NR₁₄R₁₅, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

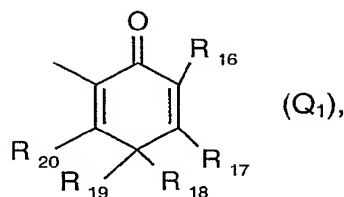
R₇ and R₄₅ are each independently of the other C₁-C₃alkoxy, C₂-C₄alkoxycarbonyl, C₁-C₃alkylthio, C₁-C₃alkylsulfinyl, C₁-C₃alkylsulfonyl or phenyl, wherein phenyl may itself be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

R₈, R₁₀, R₁₂, R₁₄ and R₄₆ are each independently of the others hydrogen or C₁-C₆alkyl;

R₉, R₁₁, R₁₃, R₁₅ and R₄₇ are each independently of the others C₁-C₆alkyl or C₁-C₆alkoxy;

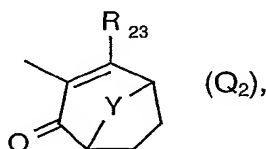
Q is the group Q₁

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wherein R₁₆, R₁₇, R₁₈ and R₁₉ are each independently of the others hydrogen, hydroxy, C₁-C₄alkyl, C₂-C₆alkenyl, C₂-C₆alkynyl, C₁-C₄alkoxycarbonyl, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₄alkyl-NHS(O)₂, C₁-C₄haloalkyl, -NH-C₁-C₄alkyl, -N(C₁-C₄alkyl)₂, C₁-C₆alkoxy, cyano, nitro, halogen, or phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, amino, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₄alkyl-S(O)₂N(C₁-C₄alkyl), halogen, nitro, COOH or by cyano; or two adjacent substituents out of R₁₆, R₁₇, R₁₈ and R₁₉ form a C₂-C₆alkylene bridge;

R₂₀ is hydroxy, O⁻M⁺, halogen, C₁-C₁₂alkoxy, C₁-C₁₂alkylcarbonyloxy, C₂-C₄alkenylcarbonyloxy, C₃-C₆cycloalkylcarbonyloxy, C₁-C₁₂alkoxycarbonyloxy, C₁-C₁₂alkylcarbonyloxy, R₂₁R₂₂N-C(O)O, C₁-C₁₂alkylthio, C₁-C₁₂alkylsulfinyl, C₁-C₁₂alkylsulfonyl, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₂-C₁₂alkenylthio, C₂-C₁₂alkenylsulfinyl, C₂-C₁₂alkenylsulfonyl, C₂-C₁₂haloalkenylthio, C₂-C₁₂haloalkenylsulfinyl, C₂-C₁₂haloalkenylsulfonyl, C₂-C₁₂alkynylthio, C₂-C₁₂alkynylsulfinyl, C₂-C₁₂alkynylsulfonyl, C₁-C₄alkyl-S(O)₂O, phenyl-S(O)₂O, (C₁-C₄alkoxy)₂P(O)O, C₁-C₄alkyl(C₁-C₄alkoxy)P(O)O, H(C₁-C₄alkoxy)P(O)O, C₁-C₁₂alkyl-S(CO)O, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C₁-C₄alkyl, C₁-C₄haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylcarbonyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylamino, di(C₁-C₄alkyl)amino, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄haloalkyl-S(O)₂O, C₁-C₄alkyl-S(O)₂NH, C₁-C₄alkyl-S(O)₂N(C₁-C₄alkyl), halogen, nitro or by cyano; and R₂₁ and R₂₂ are each independently of the other hydrogen or C₁-C₄alkyl; or is the group Q₂

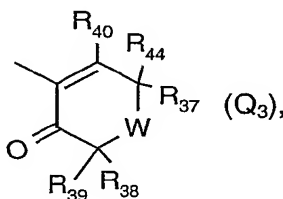


wherein R_{23} is hydroxy, O^-M^+ , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 -alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $R_{24}R_{25}N-C(O)O$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12} haloalkenylsulfonyl, C_2 - C_{12} alkynylthio, C_2 - C_{12} alkynylsulfinyl, C_2 - C_{12} alkynylsulfonyl, C_1 - C_4 -alkyl- $S(O)_2O$, phenyl- $S(O)_2O$, $(C_1$ - C_4 alkoxy) $_2P(O)O$, C_1 - C_4 alkyl(C_1 - C_4 alkoxy) $P(O)O$, $H(C_1$ - C_4 alkoxy) $P(O)O$, C_1 - C_{12} -alkyl- $S(CO)O$, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro or by cyano;

R_{24} and R_{25} are each independently of the other hydrogen or C_1 - C_4 alkyl; and

Y is oxygen, sulfur, a chemical bond or a C_1 - C_4 alkylene bridge;

or is the group Q_3



wherein R_{44} , R_{37} , R_{38} and R_{39} are each independently of the others hydrogen, C_1 - C_6 alkyl, C_1 - C_6 haloalkyl, C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_6 alkoxycarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_6 alkyl-NHS(O) $_2$, C_1 - C_6 alkylamino, di(C_1 - C_6 alkyl)amino, hydroxy, C_1 - C_6 alkoxy, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, hydroxy- C_1 - C_6 alkyl, C_1 - C_4 alkylsulfonyloxy- C_1 - C_6 alkyl, tosyloxy- C_1 - C_6 alkyl, halogen, cyano, nitro, phenyl, or phenyl substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_6 haloalkylthio, C_1 - C_6 haloalkylsulfinyl, C_1 - C_6 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_6 alkylthio- $N(C_1$ - C_4 alkyl), C_1 - C_6 alkylsulfinyl- $N(C_1$ - C_4 alkyl), C_1 - C_6 alkylsulfonyl- $N(C_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano; or adjacent R_{44} and R_{37} or R_{38} and R_{39} together are C_3 - C_6 alkylene;

W is oxygen, sulfur, sulfinyl, sulfonyl, $-\text{CR}_{41}\text{R}_{42}-$, $-\text{C}(\text{O})-$ or $-\text{NR}_{43}-$;

R_{41} is hydrogen, C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy- C_1 - C_4 alkyl, C_1 - C_4 alkylthio- C_1 - C_4 alkyl, C_1 - C_4 alkylcarbonyloxy- C_1 - C_4 alkyl, C_1 - C_4 alkylsulfonyloxy- C_1 - C_4 alkyl, tosyloxy- C_1 - C_4 alkyl, di(C_1 - C_3 alkoxyalkyl)methyl, di(C_1 - C_3 alkylthioalkyl)methyl, (C_1 - C_3 alkoxyalkyl)-(C_1 - C_3 alkylthioalkyl)methyl, C_3 - C_5 oxacycloalkyl, C_3 - C_5 thiacycloalkyl, C_3 - C_4 dioxacycloalkyl, C_3 - C_4 dithiacycloalkyl, C_3 - C_4 oxathiacycloalkyl, formyl, C_1 - C_4 alkoxycarbonyl, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{NH}$, C_1 - C_6 alkylthio- $\text{N}(\text{C}_1$ - C_4 alkyl), C_1 - C_6 alkylsulfinyl- $\text{N}(\text{C}_1$ - C_4 alkyl), C_1 - C_6 alkylsulfonyl- $\text{N}(\text{C}_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano; or R_{42} together with R_{39} is C_1 - C_6 alkylene;

R_{42} is hydrogen, C_1 - C_4 alkyl or C_1 - C_4 haloalkyl;

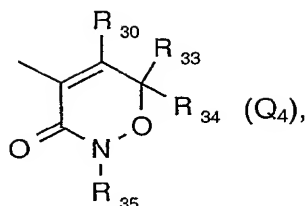
R_{40} is hydroxy, O^-M^+ , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $\text{R}_{96}\text{R}_{97}\text{N}-\text{C}(\text{O})\text{O}$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12} haloalkenylsulfonyl, C_2 - C_{12} alkynylthio, C_2 - C_{12} alkynylsulfinyl, C_2 - C_{12} alkynylsulfonyl, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{O}$, phenyl- $\text{S}(\text{O})_2\text{O}$, $(\text{C}_1$ - C_4 alkoxy) $_2\text{P}(\text{O})\text{O}$, C_1 - C_4 alkyl(C_1 - C_4 alkoxy) $\text{P}(\text{O})\text{O}$, $\text{H}(\text{C}_1$ - C_4 alkoxy) $\text{P}(\text{O})\text{O}$, C_1 - C_{12} -alkyl- $\text{S}(\text{CO})\text{O}$, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{NH}$, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{N}(\text{C}_1$ - C_4 alkyl), halogen, nitro or by cyano;

R_{96} and R_{97} are each independently of the other hydrogen or C_1 - C_4 alkyl;

R_{43} is hydrogen, C_1 - C_4 alkyl, C_1 - C_4 alkoxycarbonyl, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $\text{S}(\text{O})_2\text{O}$, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{NH}$, C_1 - C_4 alkyl- $\text{S}(\text{O})_2\text{N}(\text{C}_1$ - C_4 alkyl), halogen, nitro or by cyano;

or is the group Q_4

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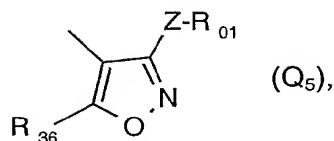


wherein R_{30} hydroxy, O^+M^- , halogen, C_1 - C_{12} alkoxy, C_1 - C_{12} alkylcarbonyloxy, C_2 - C_4 alkenylcarbonyloxy, C_3 - C_6 cycloalkylcarbonyloxy, C_1 - C_{12} alkoxycarbonyloxy, C_1 - C_{12} alkylcarbonyloxy, $R_{31}R_{32}N-C(O)O$, C_1 - C_{12} alkylthio, C_1 - C_{12} alkylsulfinyl, C_1 - C_{12} alkylsulfonyl, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_2 - C_{12} alkenylthio, C_2 - C_{12} alkenylsulfinyl, C_2 - C_{12} alkenylsulfonyl, C_2 - C_{12} haloalkenylthio, C_2 - C_{12} haloalkenylsulfinyl, C_2 - C_{12} haloalkenylsulfonyl, C_2 - C_{12} alkynylthio, C_2 - C_{12} alkynylsulfinyl, C_2 - C_{12} alkynylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, phenyl- $S(O)_2O$, $(C_1$ - C_4 alkoxy) $_2P(O)O$, C_1 - C_4 alkyl(C_1 - C_4 alkoxy) $P(O)O$, $H(C_1$ - C_4 alkoxy) $P(O)O$, C_1 - C_{12} alkyl- $S(CO)O$, benzyloxy, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl, wherein the phenyl group may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro or by cyano; and R_{31} and R_{32} are each independently of the other hydrogen or C_1 - C_4 alkyl;

R_{33} and R_{34} are each independently of the other hydrogen, hydroxy, C_1 - C_4 alkyl, C_2 - C_6 alkenyl, C_2 - C_6 alkynyl, C_1 - C_4 alkoxycarbonyl, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl-NHS(O) $_2$, C_1 - C_4 haloalkyl, -NH- C_1 - C_4 alkyl, -N(C_1 - C_4 alkyl) $_2$, C_1 - C_6 alkoxy, cyano, nitro, halogen, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_6 alkylthio, C_1 - C_6 alkylsulfinyl, C_1 - C_6 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano; or R_{33} and R_{34} together form a C_2 - C_6 alkylene bridge; and

R_{35} is hydrogen, C_1 - C_4 alkyl, C_1 - C_4 alkoxycarbonyl, or phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_4 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylcarbonyl, C_1 - C_4 alkoxycarbonyl, amino, C_1 - C_4 alkylamino, di(C_1 - C_4 alkyl)amino, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, C_1 - C_4 alkyl- $S(O)_2O$, C_1 - C_4 haloalkylthio, C_1 - C_4 haloalkylsulfinyl, C_1 - C_4 haloalkylsulfonyl, C_1 - C_4 haloalkyl- $S(O)_2O$, C_1 - C_4 alkyl- $S(O)_2NH$, C_1 - C_4 alkyl- $S(O)_2N(C_1$ - C_4 alkyl), halogen, nitro, COOH or by cyano;

or is the group Q₅



wherein Z is sulfur, SO or SO₂;

R₀₁ is hydrogen, C₁-C₈alkyl, C₁-C₈alkyl substituted by halogen, C₁-C₄alkoxy, C₁-C₄alkylthio, C₁-C₄alkylsulfonyl, C₁-C₄alkylsulfinyl, hydroxy, cyano, nitro, -CHO, -CO₂R₀₂, -COR₀₃, -COSR₀₄, -NR₀₅R₀₆, CONR₀₃₆R₀₃₇, or by phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₂₅R₀₂₆, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenepheryl or by -NR₀₁₅CO₂R₀₂₇;

or R₀₁ is C₂-C₈alkenyl or C₂-C₈alkenyl substituted by halogen, C₁-C₄alkoxy, C₁-C₄alkylthio, C₁-C₄alkylsulfonyl, C₁-C₄alkylsulfinyl, -CONR₀₃₂R₀₃₃, cyano, nitro, -CHO, -CO₂R₀₃₈, -COR₀₃₉, -COS-C₁-C₄alkyl, -NR₀₃₄R₀₃₅, or by phenyl which may itself be substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₄₀R₀₄₁, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenepheryl or by -NR₀₄₃CO₂R₀₄₂;

or R_{01} is C_3 - C_6 alkynyl or C_3 - C_6 alkynyl substituted by halogen, C_1 - C_4 haloalkyl, cyano, $-CO_2R_{044}$, or by phenyl which may itself be substituted by C_1 - C_4 alkyl, C_1 - C_6 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_2 - C_6 alkenyl, C_3 - C_6 alkynyl, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, halogen, nitro, cyano, $-COOH$, $COOC_1$ - C_4 alkyl, COO phenyl, C_1 - C_4 alkoxy, phenoxy, $(C_1$ - C_4 alkoxy)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylthio)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfinyl)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfonyl)- C_1 - C_4 alkyl, $NHSO_2$ - C_1 - C_4 alkyl, $NHSO_2$ -phenyl, $N(C_1$ - C_6 alkyl) SO_2 - C_1 - C_4 alkyl, $N(C_1$ - C_6 alkyl) SO_2 -phenyl, $N(C_2$ - C_6 alkenyl) SO_2 - C_1 - C_4 alkyl, $N(C_2$ - C_6 alkenyl) SO_2 -phenyl, $N(C_3$ - C_6 alkynyl) SO_2 - C_1 - C_4 alkyl, $N(C_3$ - C_6 alkynyl) SO_2 -phenyl, $N(C_3$ - C_7 cycloalkyl) SO_2 - C_1 - C_4 alkyl, $N(C_3$ - C_7 cycloalkyl) SO_2 -phenyl, N (phenyl) SO_2 - C_1 - C_4 alkyl, N (phenyl) SO_2 -phenyl, OSO_2 - C_1 - C_4 alkyl, $CONR_{028}R_{029}$, OSO_2 - C_1 - C_4 haloalkyl, OSO_2 -phenyl, C_1 - C_4 alkylthio, C_1 - C_4 haloalkylthio, phenylthio, C_1 - C_4 alkylsulfonyl, C_1 - C_4 haloalkylsulfonyl, phenylsulfonyl, C_1 - C_4 alkylsulfinyl, C_1 - C_4 haloalkylsulfinyl, phenylsulfinyl, C_1 - C_4 alkylenepheryl or by $-NR_{031}CO_2R_{030}$; or R_{01} is C_3 - C_7 cycloalkyl or C_3 - C_7 cycloalkyl substituted by C_1 - C_4 alkyl, C_1 - C_4 alkoxy, C_1 - C_4 alkylthio, C_1 - C_4 alkylsulfinyl, C_1 - C_4 alkylsulfonyl, or by phenyl which may itself be substituted by halogen, nitro, cyano, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_1 - C_4 alkylthio, C_1 - C_4 haloalkylthio, C_1 - C_4 alkyl or by C_1 - C_4 haloalkyl; or

R_{01} is C_1 - C_4 alkylene- C_3 - C_7 cycloalkyl, phenyl, or phenyl substituted by C_1 - C_4 alkyl, C_1 - C_6 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_2 - C_6 alkenyl, C_3 - C_6 alkynyl, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, halogen, nitro, cyano, $-COOH$, $COOC_1$ - C_4 alkyl, COO phenyl, C_1 - C_4 alkoxy, phenoxy, $(C_1$ - C_4 alkoxy)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylthio)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfinyl)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfonyl)- C_1 - C_4 alkyl, $NHSO_2$ - C_1 - C_4 alkyl, $NHSO_2$ -phenyl, $N(C_1$ - C_6 alkyl) SO_2 - C_1 - C_4 alkyl, $N(C_1$ - C_6 alkyl) SO_2 -phenyl, $N(C_2$ - C_6 alkenyl) SO_2 - C_1 - C_4 alkyl, $N(C_2$ - C_6 alkenyl) SO_2 -phenyl, $N(C_3$ - C_6 alkynyl) SO_2 - C_1 - C_4 alkyl, $N(C_3$ - C_6 alkynyl) SO_2 -phenyl, $N(C_3$ - C_7 cycloalkyl) SO_2 - C_1 - C_4 alkyl, $N(C_3$ - C_7 cycloalkyl) SO_2 -phenyl, N (phenyl) SO_2 - C_1 - C_4 alkyl, N (phenyl) SO_2 -phenyl, OSO_2 - C_1 - C_4 alkyl, $CONR_{045}R_{046}$, OSO_2 - C_1 - C_4 haloalkyl, OSO_2 -phenyl, C_1 - C_4 alkylthio, C_1 - C_4 haloalkylthio, phenylthio, C_1 - C_4 alkylsulfonyl, C_1 - C_4 haloalkylsulfonyl, phenylsulfonyl, C_1 - C_4 alkylsulfinyl, C_1 - C_4 haloalkylsulfinyl, phenylsulfinyl or by $-NR_{048}CO_2R_{047}$; or

R_{01} is C_1 - C_4 alkylenepheryl, COR_{07} or from 4- to 6-membered heterocyclyl;

R_{02} , R_{038} , R_{044} and R_{066} are each independently of the others hydrogen, C_1 - C_4 alkyl, phenyl, or phenyl substituted by C_1 - C_4 alkyl, C_1 - C_6 haloalkyl, C_1 - C_4 alkoxy, C_1 - C_4 haloalkoxy, C_2 - C_6 alkenyl, C_3 - C_6 alkynyl, C_3 - C_6 alkenyloxy, C_3 - C_6 alkynyloxy, halogen, nitro, cyano, $-COOH$, $COOC_1$ - C_4 alkyl, COO phenyl, C_1 - C_4 alkoxy, phenoxy, $(C_1$ - C_4 alkoxy)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylthio)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfinyl)- C_1 - C_4 alkyl, $(C_1$ - C_4 alkylsulfonyl)- C_1 - C_4 alkyl, $NHSO_2$ - C_1 - C_4 alkyl, $NHSO_2$ -phenyl, $N(C_1$ - C_6 alkyl) SO_2 - C_1 - C_4 alkyl, $N(C_1$ - C_6 alkyl) SO_2 -phenyl, $N(C_2$ - C_6 alkenyl)-

SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆-alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₄₉R₀₅₀, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, -C₁-C₄-alkylphenyl or by -NR₀₅₂CO₂R₀₅₃;

R₀₃, R₀₃₉ and R₀₆₇ are each independently of the others C₁-C₄alkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆-alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)-SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)-SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₆₈R₀₅₄, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, -(CH₂)_t-phenyl or by -NR₀₅₆CO₂R₀₅₅;

R₀₄ is C₁-C₄alkyl;

R₀₅ is hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl, C₃-C₆-alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂H, N(C₃-C₆alkynyl)-SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂H, N(C₃-C₇cycloalkyl)-SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)SO₂-C₁-C₄alkyl, N(phenyl)-SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₅₇R₀₅₈, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄alkylenephenyl or by -NR₀₆₀CO₂R₀₅₉;

R₀₆ is hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by C₁-C₄alkyl, C₁-C₆haloalkyl, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₂-C₆alkenyl,

C₃-C₆alkynyl, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, halogen, nitro, cyano, -COOH, COOC₁-C₄-alkyl, COOphenyl, C₁-C₄alkoxy, phenoxy, (C₁-C₄alkoxy)-C₁-C₄alkyl, (C₁-C₄alkylthio)-C₁-C₄-alkyl, (C₁-C₄alkylsulfinyl)-C₁-C₄alkyl, (C₁-C₄alkylsulfonyl)-C₁-C₄alkyl, NHSO₂-C₁-C₄alkyl, NHSO₂-phenyl, N(C₁-C₆alkyl)SO₂-C₁-C₄alkyl, N(C₁-C₆alkyl)SO₂-phenyl, N(C₂-C₆alkenyl)-SO₂-C₁-C₄alkyl, N(C₂-C₆alkenyl)SO₂-phenyl, N(C₃-C₆alkynyl)SO₂-C₁-C₄alkyl, N(C₃-C₆alkynyl)-SO₂-phenyl, N(C₃-C₇cycloalkyl)SO₂-C₁-C₄alkyl, N(C₃-C₇cycloalkyl)SO₂-phenyl, N(phenyl)-SO₂-C₁-C₄alkyl, N(phenyl)SO₂-phenyl, OSO₂-C₁-C₄alkyl, CONR₀₆₁R₀₆₂, OSO₂-C₁-C₄haloalkyl, OSO₂-phenyl, C₁-C₄alkylthio, C₁-C₄haloalkylthio, phenylthio, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylsulfonyl, phenylsulfonyl, C₁-C₄alkylsulfinyl, C₁-C₄haloalkylsulfinyl, phenylsulfinyl, C₁-C₄-alkylenephenyl or by -NR₀₆₄CO₂R₀₆₃;

R₀₇ is phenyl, C₁-C₄alkyl, C₁-C₄alkoxy or -NR₀₈R₀₉;

R₀₈ and R₀₉ are each independently of the other C₁-C₄alkyl, phenyl, or phenyl substituted by halogen, nitro, cyano, C₁-C₄alkyl, C₁-C₄alkoxy, C₁-C₄thioalkyl, -CO₂R₀₆₆, -COR₀₆₇, C₁-C₄-alkylsulfonyl, C₁-C₄alkylsulfinyl or by C₁-C₄haloalkyl; or R₀₈ and R₀₉ together form a 5- or 6-membered ring, which may be interrupted by oxygen, NR₀₆₅ or by S;

R₀₁₅, R₀₃₁, R₀₄₃, R₀₄₈, R₀₅₂, R₀₅₆, R₀₆₀ and R₀₆₄ are each independently of the others hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl or C₃-C₇cycloalkyl;

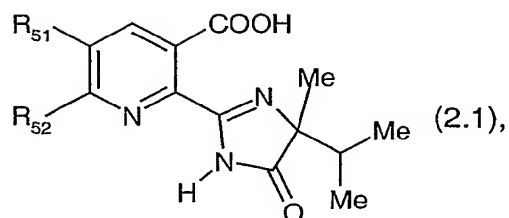
R₀₂₅, R₀₂₆, R₀₂₇, R₀₂₈, R₀₂₉, R₀₃₀, R₀₃₂, R₀₃₃, R₀₃₄, R₀₃₅, R₀₃₆, R₀₃₇, R₀₄₀, R₀₄₁, R₀₄₂, R₀₄₅, R₀₄₆, R₀₄₇, R₀₄₉, R₀₅₀, R₀₅₃, R₀₅₄, R₀₅₅, R₀₅₇, R₀₅₈, R₀₅₉, R₀₆₁, R₀₆₂, R₀₆₃, R₀₆₅ and R₀₆₈ are each independently of the others hydrogen, C₁-C₄alkyl, C₂-C₆alkenyl, C₃-C₆alkynyl, C₃-C₇cycloalkyl, phenyl, or phenyl substituted by halogen, nitro, cyano, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkylthio, C₁-C₄haloalkylthio, C₁-C₄alkyl or by C₁-C₄haloalkyl; and

R₃₆ is C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₃-C₆cycloalkyl, or C₃-C₆cycloalkyl substituted by halogen, C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₄alkoxycarbonyl, C₁-C₄alkylthio, C₁-C₄alkylsulfinyl, C₁-C₄alkylsulfonyl, C₁-C₄haloalkylthio, C₁-C₄haloalkylsulfinyl, C₁-C₄haloalkylsulfonyl, C₁-C₄alkylcarbonyl, di(C₁-C₄alkyl)amino, C₁-C₄alkoxy, C₁-C₄haloalkoxy, C₁-C₄alkyl-S(O)₂O, C₁-C₄haloalkyl-S(O)₂O, or by phenyl which may itself be substituted by halogen, C₁-C₄alkyl, C₁-C₄haloalkyl, C₃-C₆alkenyl, C₃-C₆alkynyl, cyano, nitro or by COOH;

or an agronomically acceptable salt of such a compound, and

b) a synergistically effective amount of one or more compounds selected from a compound of formula 2.1

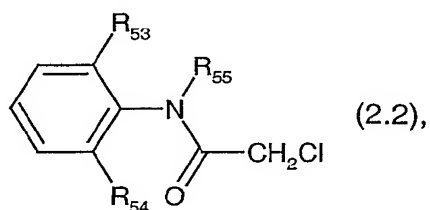
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wherein R_{51} is $\text{CH}_2\text{-OMe}$, ethyl or hydrogen;

R_{52} is hydrogen or R_{51} and R_{52} together are the group $-\text{CH}=\text{CH}-\text{CH}=\text{CH}-$;

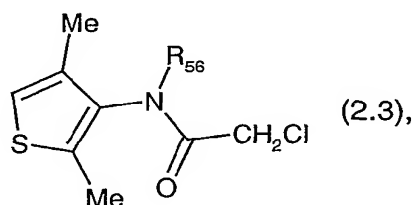
and a compound of formula 2.2



wherein R_{53} is ethyl, R_{54} is methyl or ethyl and R_{55} is $-\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$,

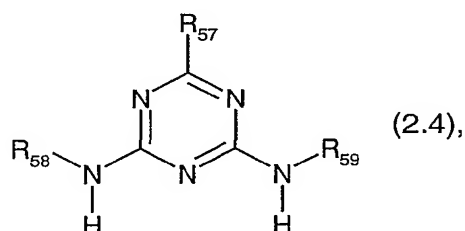
$\text{<S>CH}(\text{Me})-\text{CH}_2\text{OMe}$, CH_2OMe or $\text{CH}_2\text{O}-\text{CH}_2\text{CH}_3$;

and a compound of formula 2.3



wherein R_{56} is $\text{CH}(\text{Me})-\text{CH}_2\text{OMe}$ or $\text{<S>CH}(\text{Me})-\text{CH}_2\text{OMe}$;

and a compound of formula 2.4

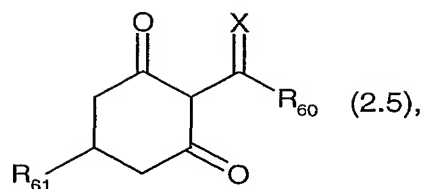


wherein R_{57} is chlorine, methoxy or methylthio, R_{58} is ethyl and R_{59} is ethyl, isopropyl,

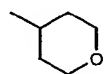
$-\text{C}(\text{CN})(\text{CH}_3)-\text{CH}_3$ or tert-butyl;

and a compound of formula 2.5

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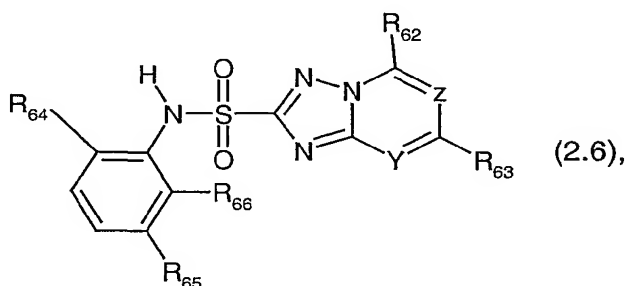


wherein R_{60} is ethyl or n-propyl, R_{61} is $\text{COO}^- 1/2 \text{Ca}^{++}$, $-\text{CH}_2\text{-CH}(\text{Me})\text{S-CH}_2\text{CH}_3$ or the group



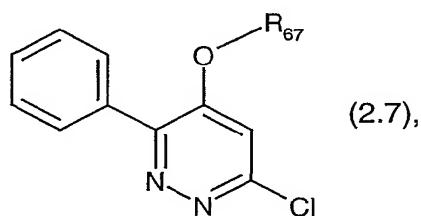
and X is oxygen, N-O-CH₂CH₃ or N-O-CH₂CH=CH-Cl;

and a compound of formula 2.6



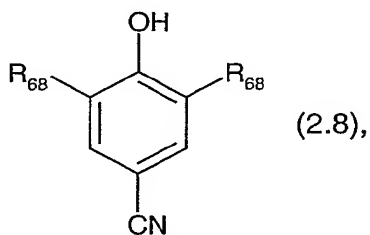
wherein R_{62} is hydrogen, methoxy or ethoxy, R_{63} is hydrogen, methyl, methoxy or fluorine, R_{64} is COOMe, fluorine or chlorine, R_{65} is hydrogen or methyl, Y is methine, C-F or nitrogen, Z is methine or nitrogen and R_{66} is fluorine or chlorine;

and a compound of formula 2.7



wherein R_{67} is hydrogen or -C(O)-S-n-octyl;

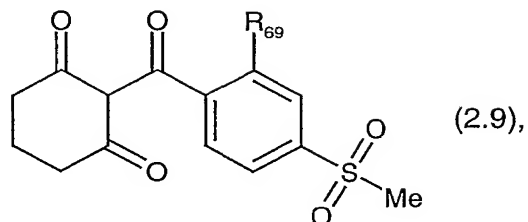
and a compound of formula 2.8



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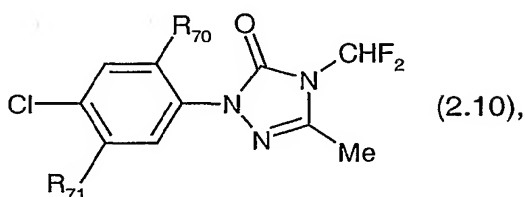
wherein R_{68} is either bromine or iodine;

and a compound of formula 2.9



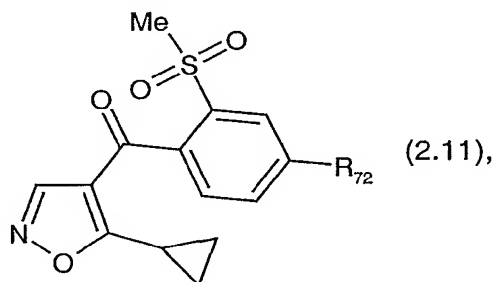
wherein R_{69} is chlorine or nitro;

and a compound of formula 2.10



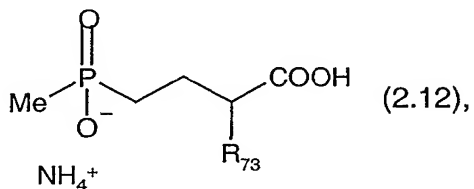
wherein R_{70} is fluorine or chlorine and R_{71} is $-\text{CH}_2-\text{CH}(\text{Cl})-\text{COOCH}_2\text{CH}_3$ or $-\text{NH}-\text{SO}_2\text{Me}$;

and a compound of formula 2.11



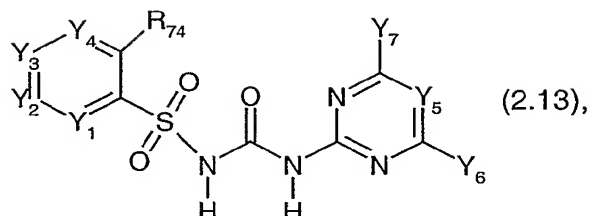
wherein R_{72} is trifluoromethyl or chlorine;

and a compound of formula 2.12



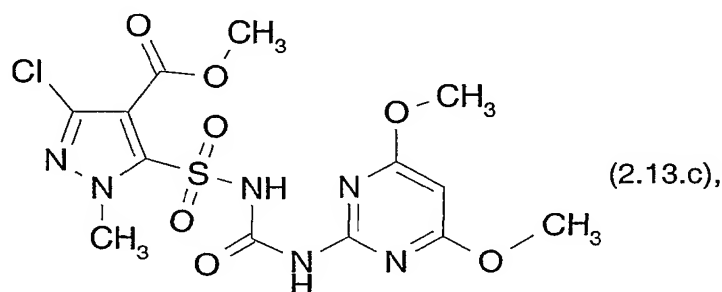
wherein R_{73} is NH_2 or <S>NH_2 ;

and a compound of formula 2.13

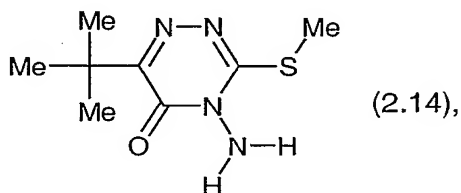


wherein Y_1 is nitrogen, methine, NH-CHO or N-Me, Y_2 is nitrogen, methine or C-I, Y_3 is methine, Y_4 is methine or Y_3 and Y_4 together are sulfur or C-Cl, Y_5 is nitrogen or methine, Y_6 is methyl, difluoromethoxy, trifluoromethyl or methoxy, Y_7 is methoxy or difluoromethoxy and R_{74} is CONMe_2 , COOMe , COOC_2H_5 , trifluoromethyl, $\text{CH}_2\text{-CH}_2\text{CF}_3$ or $\text{SO}_2\text{CH}_2\text{CH}_3$, or a sodium salt thereof;

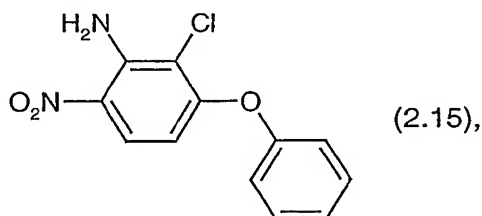
and the compound of formula 2.13.c



and the compound of formula 2.14

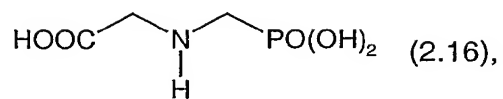


and the compound of formula 2.15

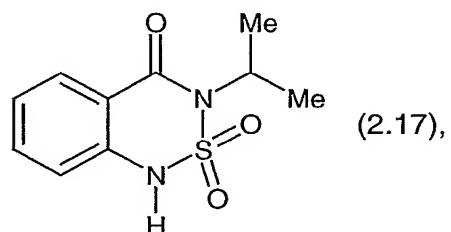


and the compound of formula 2.16

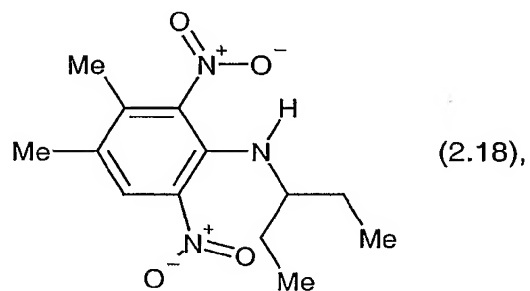
- 249 -



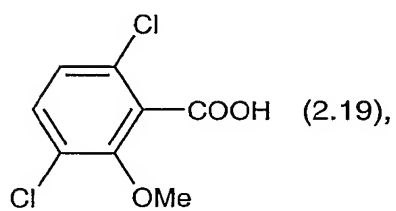
and the compound of formula 2.17



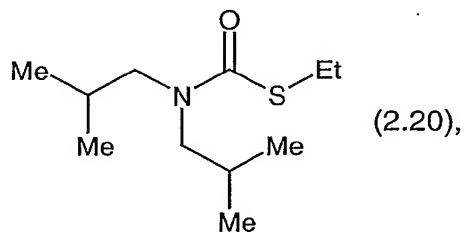
and the compound of formula 2.18



and the compound of formula 2.19

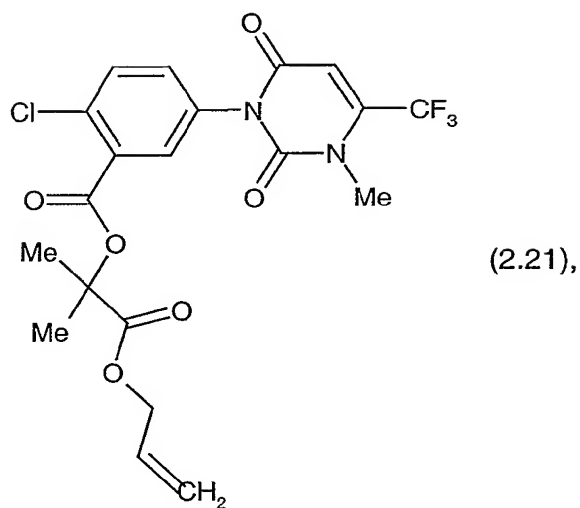


and the compound of formula 2.20

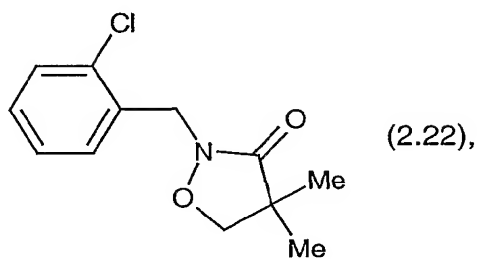


and the compound of formula 2.21

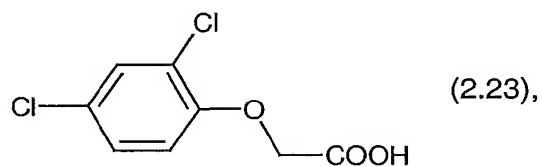
- 250 -



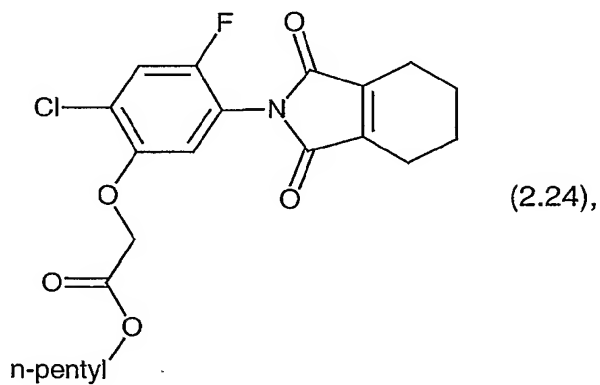
and the compound of formula 2.22



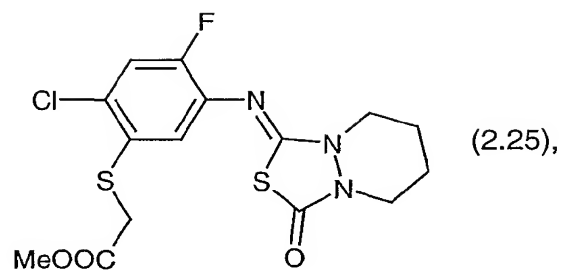
and the compound of formula 2.23



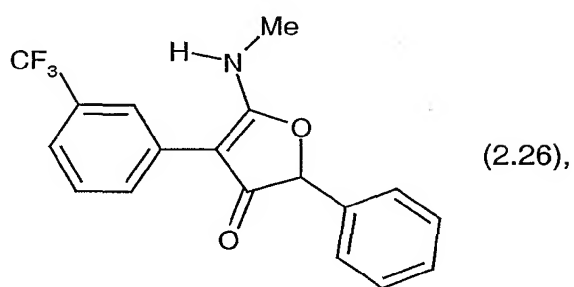
and the compound of formula 2.24



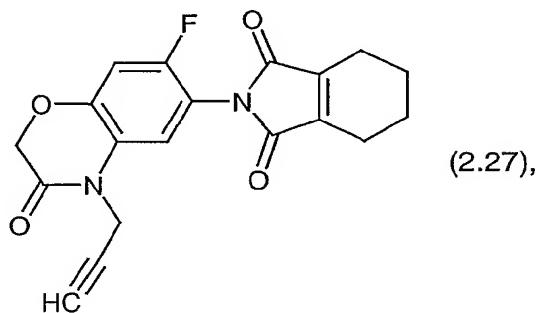
and the compound of formula 2.25



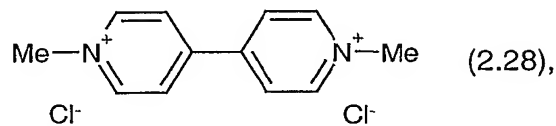
and the compound of formula 2.26



and the compound of formula 2.27

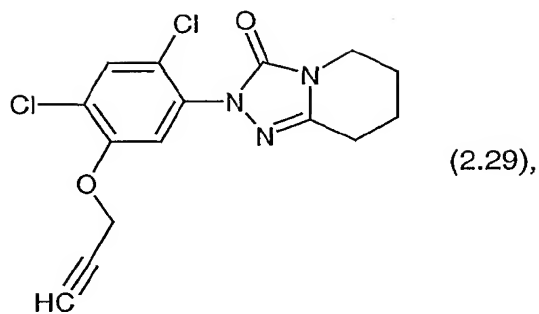


and the compound of formula 2.28

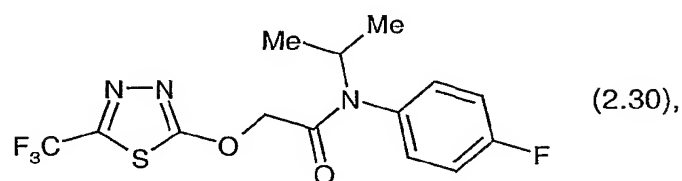


and the compound of formula 2.29

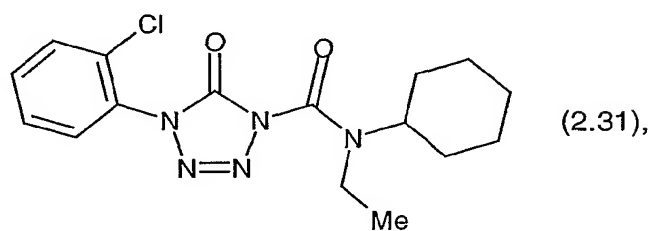
- 252 -



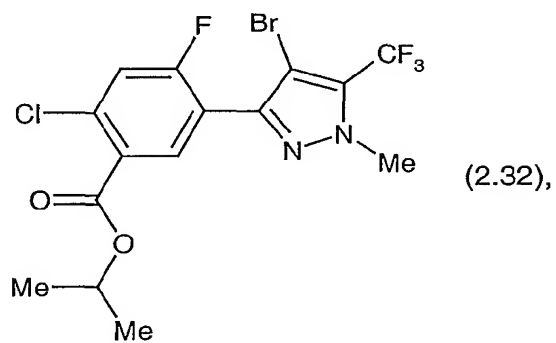
and the compound of formula 2.30



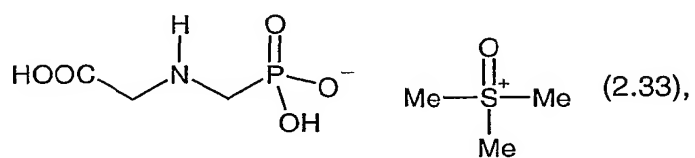
and the compound of formula 2.31



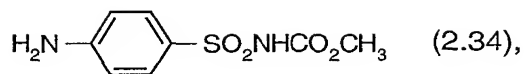
and the compound of formula 2.32



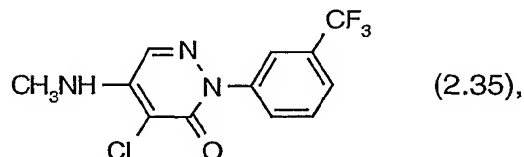
and the compound of formula 2.33



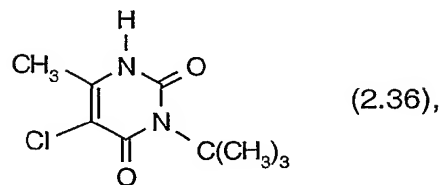
and the compound of formula 2.34



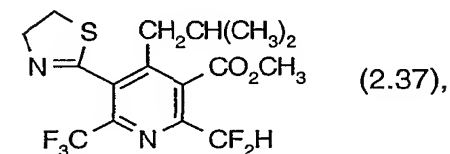
and the compound of formula 2.35



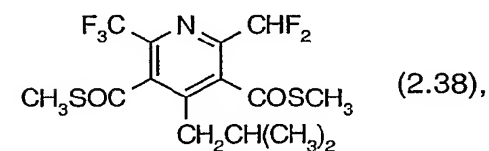
and the compound of formula 2.36



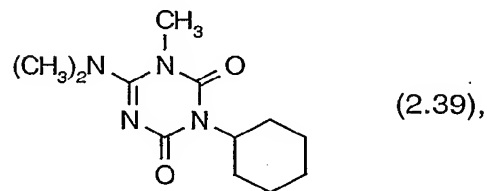
and the compound of formula 2.37



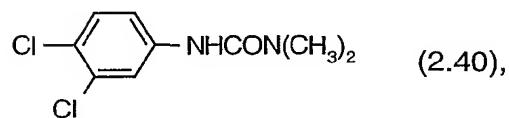
and the compound of formula 2.38



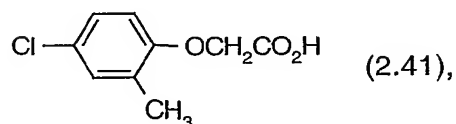
and the compound of formula 2.39



and the compound of formula 2.40

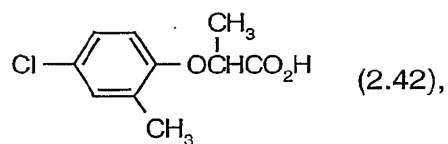


and the compound of formula 2.41

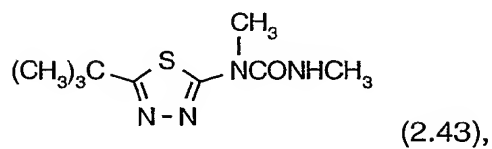


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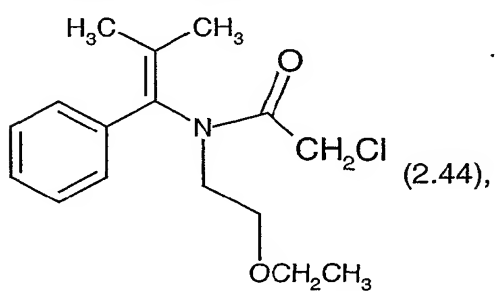
and the compound of formula 2.42



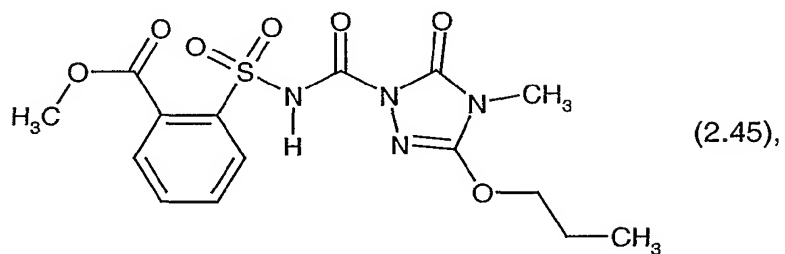
and the compound of formula 2.43



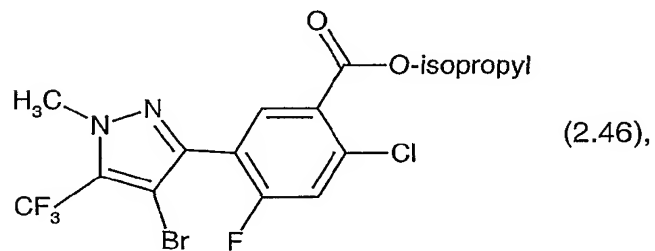
and the compound of formula 2.44



and the compound of formula 2.45

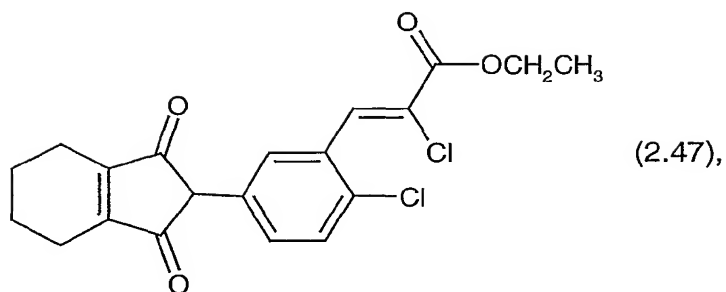


and the compound of formula 2.46

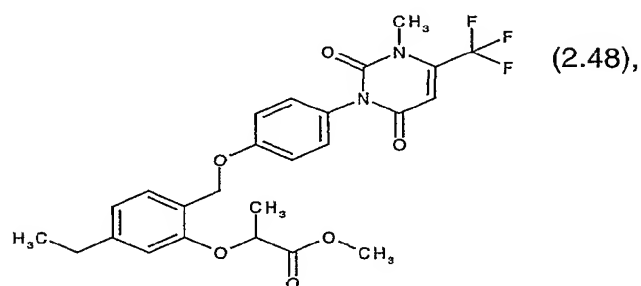


and the compound of formula 2.47

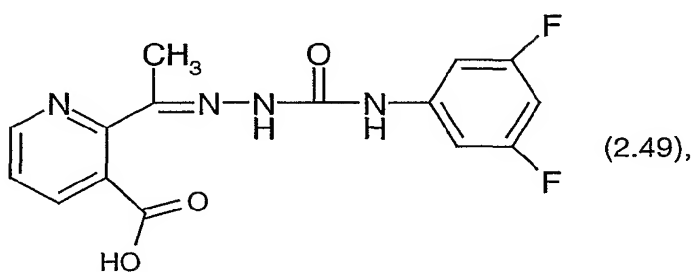
- 255 -



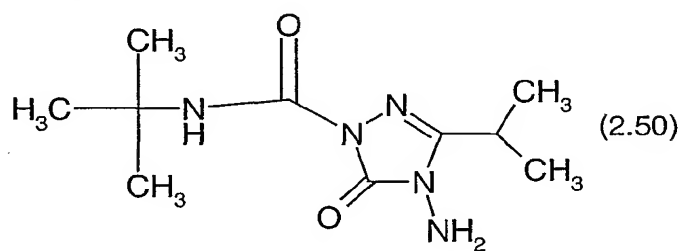
and the compound of formula 2.48



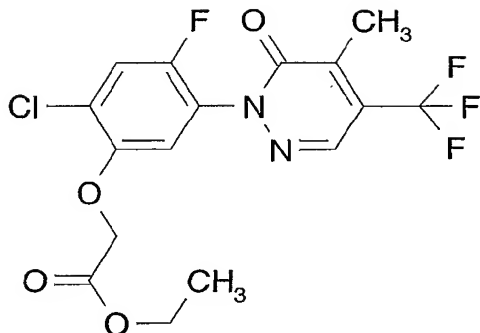
and the compound of formula 2.49



and the compound of formula 2.50



and the compound of formula 2.51



(2.51).

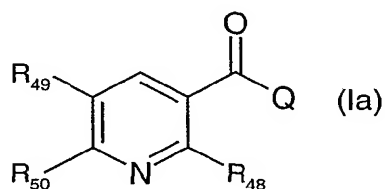
2. A composition according to claim 1, wherein in formula I

each R is independently hydrogen, C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₁-C₆alkylthio, C₁-C₆alkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkyl, C₁-C₆haloalkylthio, C₁-C₆haloalkylsulfinyl, C₁-C₆haloalkylsulfonyl, C₁-C₆alkoxycarbonyl, C₁-C₆alkylcarbonyl, C₁-C₆alkylamino, di(C₁-C₆alkyl)-amino, C₁-C₆alkylaminosulfonyl, di(C₁-C₆alkyl)aminosulfonyl, -N(R₁)-S-R₂, -N(R₃)-SO-R₄, -N(R₅)-SO₂-R₆, nitro, cyano, halogen, hydroxy, amino, benzylthio, benzylsulfinyl, benzylsulfonyl, phenyl, phenoxy, phenylthio, phenylsulfinyl or phenylsulfonyl; wherein the phenyl group may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₄₅, NR₄₆R₄₇, halogen, cyano, nitro, phenyl or by benzylthio, wherein the latter phenyl and benzylthio groups may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro;

or each R is independently a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur; wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring *via* a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio,

C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen.

3. A composition according to claim 1, that comprises, as compound of formula I, a compound of formula Ia



wherein

R₄₈ is C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl, C₁-C₆haloalkyl, or a monocyclic or fused bicyclic ring system having from 5 to 10 members, which may be aromatic or partially saturated and may contain from 1 to 4 hetero atoms selected from nitrogen, oxygen and sulfur, wherein the ring system either is bound directly to the pyridine ring or is bound to the pyridine ring *via* a C₁-C₄alkylene group, and each ring system may not contain more than two oxygen atoms and may not contain more than two sulfur atoms, and the ring system may itself be mono-, di- or tri-substituted by C₁-C₆alkyl, C₁-C₆haloalkyl, C₃-C₆alkenyl, C₃-C₆haloalkenyl, C₃-C₆alkynyl, C₃-C₆haloalkynyl, C₁-C₆alkoxy, C₁-C₆haloalkoxy, C₃-C₆alkenyloxy, C₃-C₆alkynyloxy, mercapto, C₁-C₆alkylthio, C₁-C₆haloalkylthio, C₃-C₆alkenylthio, C₃-C₆haloalkenylthio, C₃-C₆alkynylthio, C₂-C₅alkoxyalkylthio, C₃-C₅acetylalkylthio, C₃-C₆alkoxycarbonylalkylthio, C₂-C₄cyanoalkylthio, C₁-C₆alkylsulfinyl, C₁-C₆haloalkylsulfinyl, C₁-C₆alkylsulfonyl, C₁-C₆haloalkylsulfonyl, aminosulfonyl, C₁-C₂alkylaminosulfonyl, C₂-C₄dialkylaminosulfonyl, C₁-C₃alkylene-R₇, NR₈R₉, halogen, cyano, nitro, phenyl or by benzylthio, wherein phenyl and benzylthio may themselves be substituted on the phenyl ring by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and wherein the substituents on the nitrogen in the heterocyclic ring are other than halogen;

R₄₉ is hydrogen, C₁-C₆alkyl, C₁-C₆haloalkyl, halogen, or phenyl which may be substituted by C₁-C₃alkyl, C₁-C₃haloalkyl, C₁-C₃alkoxy, C₁-C₃haloalkoxy, halogen, cyano or by nitro, and R₅₀ is C₁-C₆haloalkyl.

4. A composition according to claim 3, wherein R₄₈ is C₁-C₆alkyl, C₂-C₆alkenyl, C₂-C₆haloalkenyl, C₂-C₆alkynyl, C₂-C₆haloalkynyl, C₃-C₆cycloalkyl or C₁-C₆haloalkyl.

5. A composition according to claim 1, wherein in formula I Q is the group Q₂ or Q₃.

6. A composition according to claim 5, wherein in the group Q₂ R₂₃ is hydroxy.

7. A composition according to claim 5, wherein in the group Q₃ R₄₀ is hydroxy.

8. A method of controlling undesired plant growth in crops of useful plants, which comprises allowing a herbicidally effective amount of a composition according to claim 1 to act on the crop plant or the locus thereof.

9. A method according to claim 8, wherein the crop plant is maize or sugar cane.

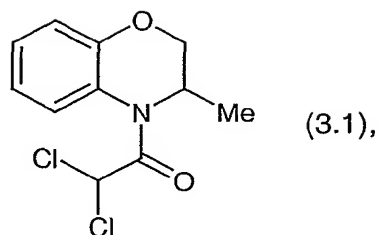
10. A method according to claim 8, wherein the crops of useful plants are treated with the mentioned composition at rates of application corresponding to a total amount of active ingredient of from 1 to 5000 g per hectare.

11. A herbicidally selective composition that, in addition to comprising customary inert formulation adjuvants, such as carriers, solvents and wetting agents, comprises as active ingredient a mixture of

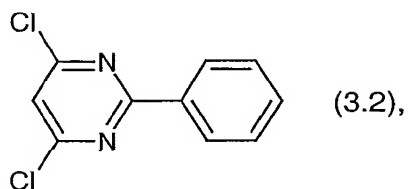
a) a herbicidally-synergistically effective amount of a compound of formula I according to claim 1 and one or more compounds selected from the compounds of formulae 2.1 to 2.51 according to claim 1 and

b) a herbicidally-antagonistically effective amount of a compound selected from the compound of formula 3.1

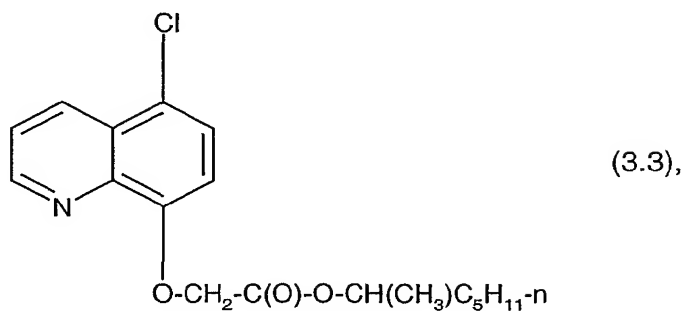
- 259 -



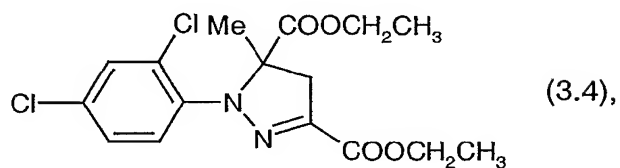
and the compound of formula 3.2



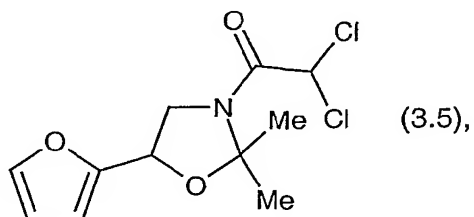
and the compound of formula 3.3



and the compound of formula 3.4

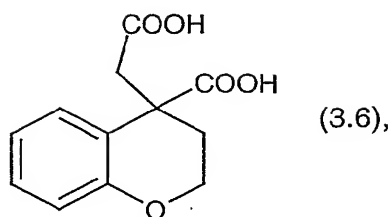


and the compound of formula 3.5

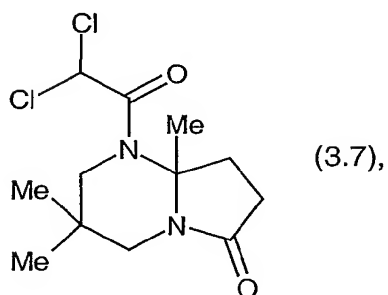


and the compound of formula 3.6

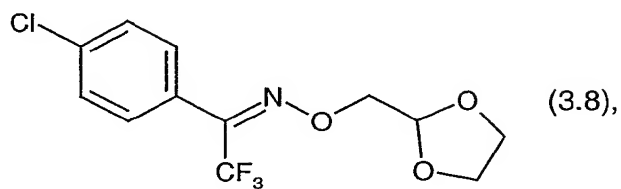
- 260 -



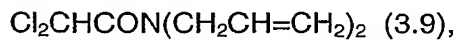
and the compound of formula 3.7



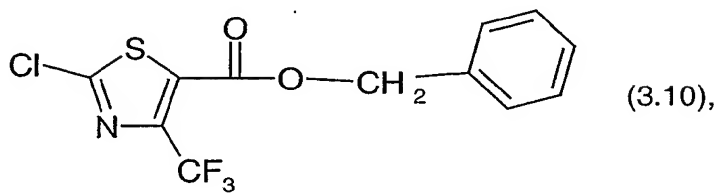
and the compound of formula 3.8



and of formula 3.9

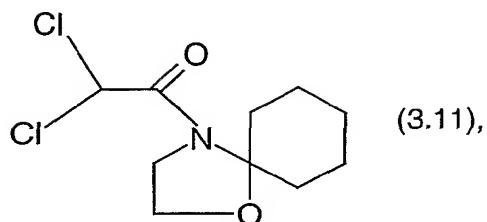


and of formula 3.10

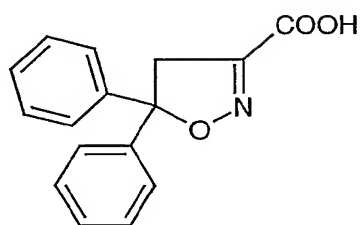


and of formula 3.11

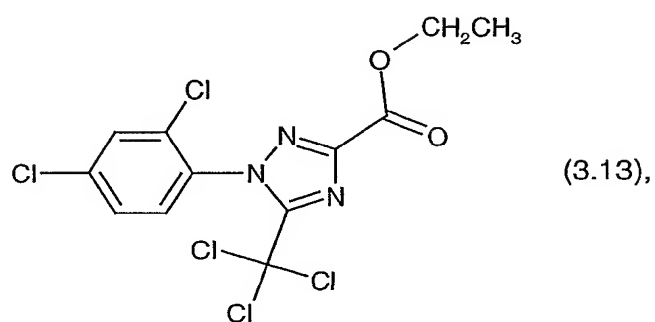
- 261 -



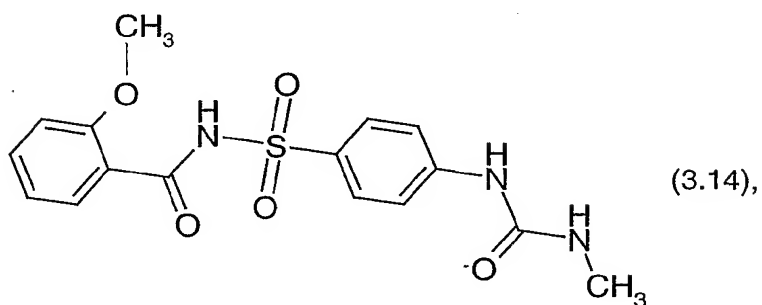
and of formula 3.12



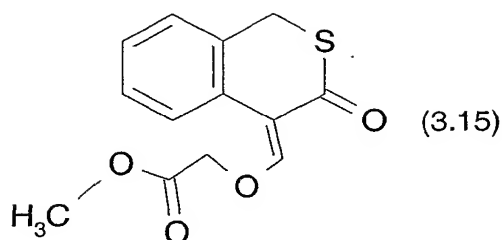
and of formula 3.13



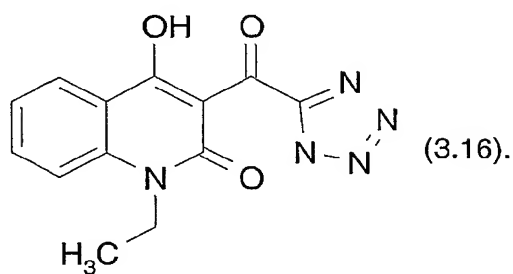
and of formula 3.14



and of formula 3.15



and of formula 3.16



12. A method for the selective control of weeds and grasses in crops of useful plants, which comprises treating the useful plants, seeds or cuttings thereof, or the area of cultivation thereof, with a herbicidally-synergistically effective amount of a composition according to claim 10.

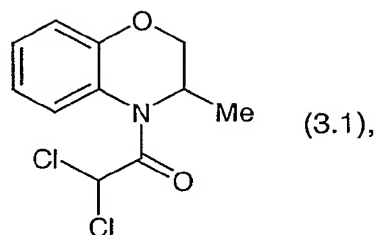
13. A method according to claim 12, wherein the rate of application of herbicides is from 1 to 5000 g/ha and the rate of application of safener is from 0.001 to 0.5 kg/ha.

14. A method according to claim 12, wherein the crops of useful plants are maize or sugar cane.

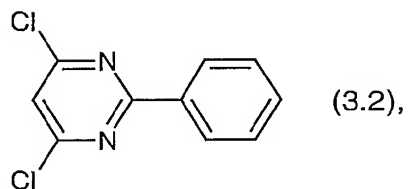
15. A herbicidally selective composition that, in addition to comprising customary inert formulation adjuvants, such as carriers, solvents and wetting agents, comprises as active ingredient a mixture of

- a) a herbicidally effective amount of a compound of formula I according to claim 1 and
- b) a herbicidally-antagonistically effective amount of a compound selected from the compound of formula 3.1

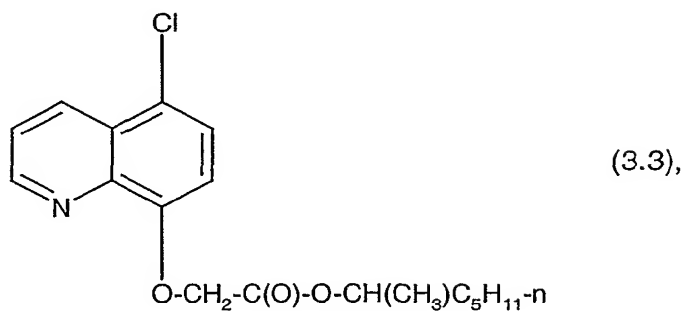
- 263 -



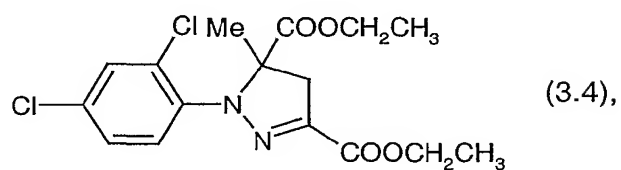
and the compound of formula 3.2



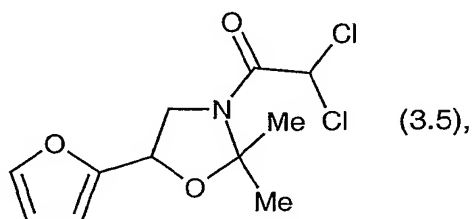
and the compound of formula 3.3



and the compound of formula 3.4

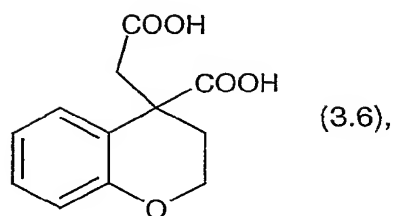


and the compound of formula 3.5

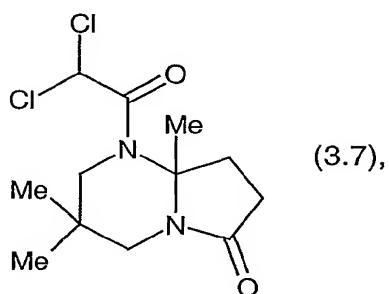


and the compound of formula 3.6

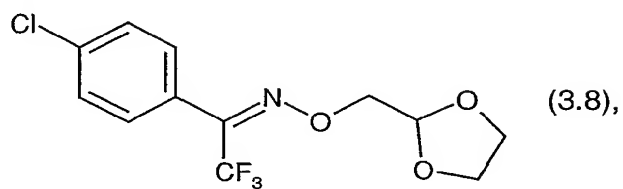
- 264 -



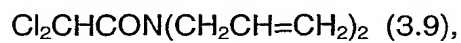
and the compound of formula 3.7



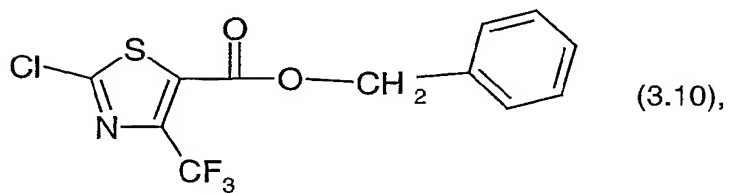
and the compound of formula 3.8



and of formula 3.9

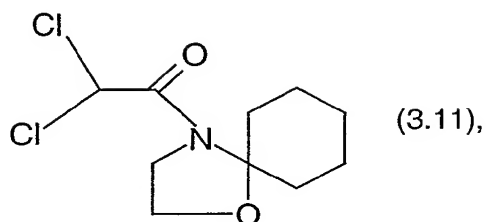


and of formula 3.10

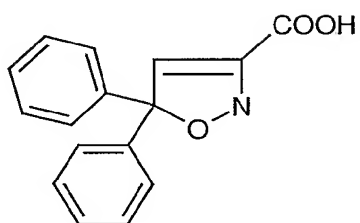


and of formula 3.11

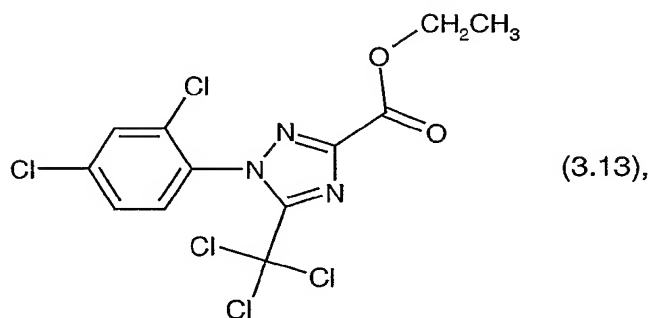
- 265 -



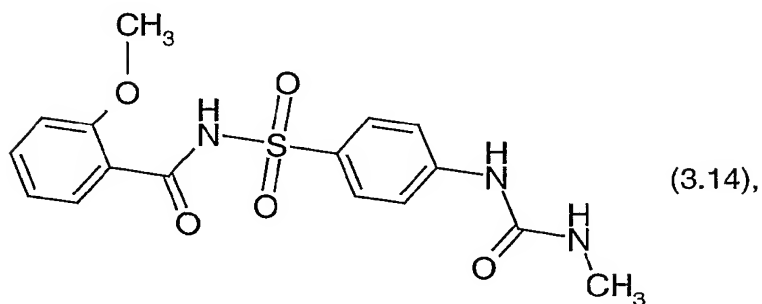
and of formula 3.12



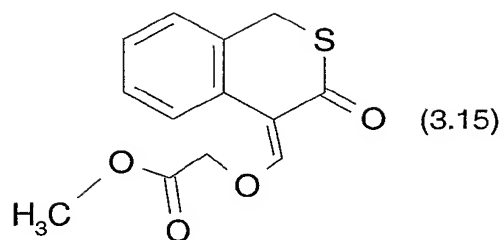
and of formula 3.13



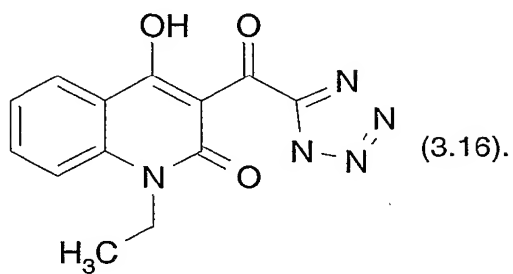
and of formula 3.14



and of formula 3.15



and of formula 3.16



16. A method for the selective control of weeds and grasses in crops of useful plants, which comprises treating the useful plants, seeds or cuttings thereof, or the area of cultivation thereof, with a herbicidally-synergistically effective amount of a composition according to claim 14.